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Video Presentations

EAES VIDEO AWARD SESSION

V001 - Video - Liver and Biliary Tract Surgery

Pure Laparoscopic in Semiprone Position Using a Dual Handling Technique with a Intercostal Port: Consideration of 15 Cases

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Background: We developed a novel method of performing laparoscopic liver resection in the semi-prone position for safety resection especially patients with tumors in the anterosuperior and posterior segments.

Patient and Methods: Laparoscopic hepatectomy using this technique were underwent 56 case, including 15 cases of posterior segmentectomy. The video is shown the patient was a 70-year-old man with hepatitis C chronic hepatitis, Child-Pugh score A. During follow-up computed tomography, a 35 mm lesion was observed in the posterior segment. The ingenuities of our surgical techniques are as follows: 1. The patient is placed in semi-prone position. 2.The hepatoduodenal ligament is encircled with cotton tape for Pringle manoeuvre. 3. To perform hilar dissection, Rouviere's sulcus was oriented and the portal pedicle of the posterior segment was encircled by dividing between the hepatic pellicle and Glisson sheath whole circumference carefully. 4. The bipolar irrigation system was used as surgical energy for all procedures. 5. The vessels are individually closed with ligations and vascular clips (Hem-o-lok™).

Results: Fourteen cases of posterior resection were performed with this procedure. There were no conversions to open surgery, reoperations, major complications, or deaths. The average operative time was 264 min, the average blood loss was 220 g, and the average postoperative hospital stay was 9 days.

Conclusions: This procedure is considered to be a safe modality for anatomical laparoscopic hepatectomy.

V002 - Video - Intestinal, Colorectal and Anal Disorders

Proctectomy and Ileal Pouch-Anal Anastomosis by Transanal and Transabdominal Approach for Ulcerative Colitis

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Aims: Laparoscopic restorative proctocolectomy and ileal pouch-anal anastomosis (IPAA) is the intervention of choice for patients with refractory ulcerative colitis (UC). Despite its excellent outcome, laparoscopic dissection is still a technical challenge, especially in the most distal part of the pelvis or in the presence of severe rectal inflammation. These patients can benefit from the transanal and transabdominal combined approach, especially during the proctectomy and IPAA.

Methods: We present the case of a 73-year old woman with past medical history of laparoscopic total colectomy and terminal ileostomy due to refractory ulcerative colitis. Patient presented with recurrent rectal bleeding despite of medical treatment. Proctectomy and IPAA by simultaneous transanal and transabdominal approach was then proposed. The abdominal team started with the exteriorization of the terminal ileum through the ileostomy orifice and fashioning of the J-pouch. A purse-string suture was placed at the end of the pouch, inserting the anvil for the future mechanical anastomosis. Simultaneously, the perineal team started the proctectomy with laparoscopic instruments. After transanal insertion of a GelPoint device and CO_2 insufflation, the first maneuver was to occlude the rectal lumen with a purse-string suture just above the dentate line leaving a short rectal cuff. Full-thickness section of the rectal wall was then performed and a close rectal dissection in a down-to-up fashion was completed until the *rendezvous* with the abdominal team. The rectum was extracted transanally and a mechanical anastomosis was performed. The abdominal team finished the surgery with the construction of a diverting ileostomy.

Results: Operative time was 140 min. Patient started oral intake 24 h after surgery and was discharged 3 days later. After 2 years of follow-up, the patient has not presented any complication with good pouch function after ileostomy closure.

Conclusion: Proctectomy and ileal pouch-anal anastomosis by simultaneous transanal and transabdominal approach is safe and feasible for patients with refractory UC. Further investigation is justified to assess any benefit when compared to previous techniques.

V003 - Video - Endocrine Surgery

Transoral Endoscopic Thyrpoidectomy Vestibular Approach (Toetva) with Intraoperative Neuromonitoring

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Aims: Transoral thyroidectomy (TT) is currently multi-istitutional. TT is being embraced by several universities internationally as in Thailand, South Korea, India, China, Singapore, Taiwan, USA, Mexico, Japan, Hongkong, Philippines, Indonesia, Ecuador and Italy. The general impression is that TT, will be accepted as the newest frontier in minimally invasive thyroid surgery.

Methods: In this video we depict the TransOral Endoscopic Thyroidectomy Vestibular Approach (TOETVA). Patient selection criteria are ultrasonographically (US) estimated thyroid diameter not larger than 10 cm, US estimated gland volume≤45 mL, nodule size≤50 mm, a benign tumor, such as a thyroid cyst, single-nodular goiter, or multinodular goiter, follicular neoplasm, papillary microcarcinoma without evidence of metastasis. TOETVA is carried out through three-port technique placed at the oral vestibule, one 10 mm port for 30° endoscope and two additional 5 mm ports for dissecting and coagulating instruments. CO_2 insufflation pressure is set at 6 mmHg. An anterior cervical subplatysmal space is created from the oral vestibule down to the sternal notch, laterally to the sternocleidomastoid muscles bilaterally.

Results: Thyroidectomy is done fully endoscopically using conventional endoscopic instruments. Intraoperative neuromonitoring is used for identification, dissecting and monitoring both the superior and inferior laryngeal nerves.

Conclusion: TOETVA may provide a method for ideal cosmetic results. We will continue to carefully apply this technique in selected patients. TOETVAshould only be performed in highly specialized centers for endocrine and endoscopic surgery. Current and future trends in research will focus on refinement or developing dedicated surgical instruments.

V004 - Video - Pancreas

Laparoscopic Pancreaticoduodenectomy with Reconstruction of the Mesentericoportal Vein with the Parietal Peritoneum

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A 70 year old male patient with suspected IPMN underwent laparoscopic pancreaticoduodenectomy, a lateral invasion of the mesentericoportal vein was resected and reconstructed with the falciform ligament, the postoperative course was uneventful and postoperative CT scan showed a patent portal vein without any stenosis.

V005 - Video - Emergency Surgery

Laparoscopic Mesh Repair of a Diaphragmatic Hernia Presenting as Large Bowel Obstruction

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Background: Adult diaphragmatic hernias are most frequently reported as those following trauma and present with pain or reflux symptoms.

Case presentation: A 66 year old male presented to A&E with large bowel obstruction. His primary complaint was constipation for 1/52 and associated abdominal pain. His only significant previous history was that of a laparoscopic hiatus hernia repair 4 years ago. Radiological imaging confirmed the presence of large bowel in a diaphragmatic hernia. A laparoscopic approach was used to repair the hernia. Patient made a swift recovery and was discharged in day 2 having opened his bowels and symptom free at 3 month follow up.

Discussion: Diaphragmatic hernias are usually associated with trauma. The patient denied any form of blunt or sharp trauma. Our hypothesis is that this hernia was secondary to the hiatus hernia repair, an inadvertent diathermy injury or excessive tension on the primary hiatal repair sutures.

Conclusion: Diaphragmatic repairs can be managed laparoscopically in the emergency patient.

V006 - Video - Oesophageal and Oesophagogastric Junction Disorder

Treatment of Esophageal Stent Migration: When Endoscopy Alone is not Enough

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Introduction: Anastomotic complications following gastroesophageal surgery are rare but carry important morbidity. There is a lack of consensus regarding the management of leakage from these anastomosis because of the broad spectrum of severity of the clinical manifestations. High rates of mortality and morbidity following open surgical intervention for anastomotic leakage lead to the development of several minimally invasive methods, such as endoscopic stents, clips, fibrin glue, and endoluminal vacuum therapy. The success rate of the larger series using endoluminal stents range from 54 to 77%.

The most encountered complication of coated self-expanding stents is its migration (up to 28%). Management of this complication is usually nonsurgical, either endoscopic reposition or waiting for the stent to be eliminated spontaneously through the rectum.

Methods: A 68 year-old man with adenocarcinoma of the esophagogastric junction type Siewert II was operated and laparoscopic total gastrectomy with distal esophagectomy was performed. In the postoperative day 3 a barium swallow was performed, and showed an esophagojejunal leak draining in the right pleura. An endoscopy was performed that showed a 3 cm defect on the anastomosis with one of the thoracic drainage inside the esophageal lumen. The drainage was mobilized and a coated self-expanding stent was inserted.

On PO day 13 a CT scan was performed and migration of the stent into the jejunum was seen. The Endoscopy showed the stent 35 cm distal to the anastomosis and it was not possible to retrieve it. A combined approach: laparoscopy-endoscopy was decided.

Results: Surgery showed the stent at the jejunum with no signs of perforation through the bowel. The stent was mobilized to the level of the anastomosis and the endoscopic team was thus able to recover it. The patient recovered uneventfully after the stent retrieval with no further signs of anastomotic leak.

Conclusions: Self-expanding stents are useful for the treatment of anastomotic leaks after gastroesophageal surgery. Nonetheless, complications associated with the stents should not be overlooked. Migrated stents are usually easily recovered by endoscopy. In the case the endoscopy alone is not effective, a combined laparoscopic-endoscopic approach may be safe and useful.

V007 - Video - Robotics, Telesurgery and Virtual Reality

Robotic Revascularization of Hepato-Splenic District in a Patient Missing the Celiac Trunk with Large Aneursyms on the Pancreatico-Duodenal Arcades

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Aims: Complete absence of the celiac trunk is an exceedingly rare anatomic variation. Under these circumstances blood supply to the liver, to the pancreas, to the spleen, and to the stomach is largely dependent on the superior mesenteric artery and its branches. In these patients, when aneurysms arise on the hypertrophic pancreatoduodenal arcades, endovascular treatment can lead to the occlusion of compensatory hepatic blood supply with anticipated serious consequences. We herein present the video of one of these patients in whom a celiac trunk was constructed robotically, thus permitting subsequent treatment of two large aneurysms located on the pancreaticoduodenal arcades.
Methods: A 70-year-old male patient, with past medical history of atrial fibrillation and type II mellitus diabetes, was referred to us because of two large (12 and 13 mm) aneurysms on the pancreaticoduodenal arteries. Contrast enhanced computed tomography and angiography demonstrated that the celiac trunk was totally missing. The arterial supply to all upper abdominal organs was provided only by the superior mesenteric artery and in particular by the very large and tortuous pancreaticoduodenal arcades. Endovascular treatment of aneurysms was thought impossible without occlusion of the pancreaticoduodenal arcades. The patient was then scheduled for robotic construction of a celiac trunk with sequential endovascular treatment of visceral aneurysms. Vascular anastomoses were performed using 5/0 and 6/0 expanded polytetrafluoroethylene. Total operative time was 275 min. Aortic crossclamping lasted for 5 min. Blood loss was minimal and, as such, could not be estimated. The post-operative course was uneventful. Follow-up computed tomography showed a patent celiac trunk and that one of the two aneurysms had thrombosed spontaneously. One month later, the remianing aneurysm was occluded angiographically using coils. One year later the patient is doing well without radiologic evidence of aneurysms perfusion.
Conclusions: This video shows how the enhanced dexterity offered by robotic assistance can be used to face unusual, but challenging, vascular conditions that would otherwise require complex open procedures.

VIDEO PRESENTATIONS

V008 - Video - Abdominal Cavity and Abdominal Wall

Fast-Track Day-Clinic Robotic Tapp for Athlete Hernia. A Novel Approach to a Controversial Problem

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Introduction: Groin pain is a common complaint among athletes especially basketball and soccer players. This is often attributed to a large group of conditions generally addressed as sports hernia. Laparoscopic sports hernia repair has been shown to be a safe and efficient approach for treating sports hernias.
Aim: We hereby present our fast-track day-clinic robotic TAPP repair technique for sportsmen hernia.
Materials: Based on an extensive laparoscopic experience of 1884 inguinal TEP and TAPP repairs as well as extensive experience with robotic surgery (1543 General Surgery procedures) we recently introduced a completely robotic technique for repairing inguinal hernias and sportsman hernias (37 cases). Our technique uses one 12 mm optic trocar infraumbilically and two 7 mm robotic trocars. No assistant trocar is used. After insicing the peritoneum, the preperitoneal space is entered and dissected with monopolar scissors and bipolar grasper. If a hernia coexists it is reduced and the sac is dissected away from the spermatic cord and its elements. After completion of the dissection, a light-weight macroporous vicryl-polypropylene mesh is entered through the optic trocar and is fixed with cyanoacrylate glue. Peritoneum is sutured back to its position using absorbable barbed suture.
Results: Mean console time was 70 min for bilateral sports hernia repair. No intraabdominal complications or blood loss have been recorded. All patients recovered quickly within the first 5–10 h postoperatively and were discharged within 12 h postoperatively. All athletes returned to normal training within 6 weeks after the procedure. Two inguinal hernia patients presented with small seromas that resolved spontaneously. No long-term complications were noted in the robotic group.
Conclusions: Our proposed fast-track day-clinic robotic TAPP repair technique is safe and efficient but in order to be cost-effective it should be used in institutions where the system is available and there is a high volume of cases.

V009 - Video - Abdominal Cavity and Abdominal Wall

Fluorescence Angiography to Assess Colorectal Anastomosis Perfusion During Laparoscopic Surgery

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Aims: Indocyaninie Green dye (ICG) can be used to assess the vascular and tissue perfusion of an organ. Anastomotic failure following resectional surgery causes major morbidity and mortality and is principally thought to arise from inadequate perfusion of the two ends of the organ. The adequacy of this perfusion relies on the surgeon's visual appreciation of the bowel in normal light. We demonstrate the use of ICG dye and near-infrared fluorescence during a laparoscopic anterior resection with anastomosis.

Methods: A 62 year-old female underwent a laparoscopic anterior resection for an upper rectal adenocarcinoma using a Stryker 1588 AIM (Advanced Imaging Modality) platform. Intravenous ICG (Verdye, 0.3 mg/kg, Diagnostic Green, GmbH, Germany) was administered and fluorescence angiography was used to assess perfusion both prior to and following a stapled anastomosis.

Results: Vascular perfusion is evident in the vascular pedicle of the afferent limb by fluorescence in real-time. Tissue perfusion in the bowel wall of both the afferent and the efferent limbs is seen prior to the construction of the anastomosis. The deleterious effects of tension in the anastomosis, or compression of the tissues in the anastomosis, can be assessed by the fluorescence of the staple line after anastomosis. The rapid clearance and metabolism of the ICG ensures that further assessments of perfusion can be made with ICG if the anastomosis needs to be revised.

Conclusions: ICG fluorescence visualised through the Stryker 1588 AIM technology is a safe, simple and inexpensive technique for evaluating tissue perfusion during laparoscopic colorectal surgery. By utilising near-infrared fluorescence this technique provides the surgeon with an additional method for assessing adequate anastomotic perfusion prior to completing the operation. Further studies are needed to determine whether this technique can reduce the incidence of anastomotic complications.

V010 - Video - Abdominal Cavity and Abdominal Wall

Robotar: Robot-Assisted Posterior Component Separation for Treatment of Wide Incisional Hernias

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Introduction: Treatment for incisional hernias is surgical repair with a synthetic mesh and can be performed by an open approach or by laparoscopy. A laparoscopic approach is associated with less wound infections but usually an intra-peritoneal mesh is used, with risk of adhesions and pain from meshfixation. Moreover if the hernia defect exceeds 7–8 cm in width closure of the defect by laparoscopy is difficult. To avoid a bridging repair an open component separation technique is preferred. We present a robotic-assisted technique of retromuscular mesh repair after transversus abdominus release (TAR).

Case presentation: We present a case of a 76 years old female patient with a symptomatic large incisional hernia after repeated laparotomy for rectal cancer and rectovaginal fistula. CT-scan confirmed a large incisional hernia. A robotic-assisted repair was planned by a double-docking approach. Placement of three trocars (8 mm) along the left lateral abdomen was followed by adhesiolysis and reduction of the hernia. Retro-muscular dissection at the right side was started, separating the rectus muscle from the posterior fascia. Dissection extended from subxyphoidal to retropubic and laterally until the semilunar line. TAR was performed after incision of the posterior lamina of the internal oblique muscle, medial to the semilunar line. In this way, the underlying transverse abdominal muscle was exposed and divided, exposing the fascia transversalis. Next, trocars were placed at the right side. A large pore, monofilament polyester mesh (Versatex™ 30×40 cm) was placed in the right retro-muscular plane and fixated to the right abdominal wall with 3 absorbable sutures. The same retro-muscular dissection and TAR was performed at the left side. The posterior rectus sheath was closed with a barbed suture (V-loc 2/0) and the anterior fascia with a barbed suture (V-loc 0). The mesh was placed retro-muscular. Patient was discharged after 2 days. Follow-up at 3 weeks demonstrated no hernia recurrence.

Conclusion: Robotic-assisted retromuscular incisional hernia repair allowed reconstruction of the abdominal wall, adequate musculofascial dissection, and extraperitoneal mesh placement, with minimal wound morbidity. The flexibility and dexterity of robotic instrumentation facilitates this technique in a minimal invasive approach. Initial experience shows significant less pain and much faster recovery.

V011 - Video - Abdominal Cavity and Abdominal Wall

PPOM: Preperitoneal Onlay Mesh Repair - A Novel Laparoscopic Technique to Avoid Intraperitoneal Mesh Placement

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Objective: IPOM is the current technique for laparoscopic repair of ventral and incisional hernias. However, the placement of synthetic mesh intraperitoneally may potentially lead to mesh related complications as adhesions with intestinal obstruction, enterocuteous fistula or even mesh erosion into organs. Recently new approaches as preperitoneal onlay mesh repair try to avoid these disadvantages.

Methods: We present a video of a single port laparoscopic preperitoneal onlay mesh repair in a primary umbilical hernia. A 32 y old patient presented with a primary umbilical hernia of 3×4 cm.

Results: A 2 cm open single incicion approach was performed left lateral and a single port system with four trocars introduced. After intraabdominal overview adhesiolysis was carried out and the greater omentum reduced out of the hernia sac. To create a peritoneal flap peritoneal incision was startet close to the port system. Peritoneum was taken down both by blunt and sharp dissection surrounding the hernia gap. After freeing strong fibrotic adhesions to the hernia defect, sac and umbilical skin the preperitoneal layer was followed towrds the patients right side. The hernia defect was closed with unreseorbable sutures. After suturing little peritoneal gaps a 15 cm Symbotex Mesh was oriented placed in the preperitoneal space and glued with Liquiband. No tacks or sutures were used. Peritoneal flap closure was partially glued resp. sutured with V – Loc, even complete covering of the mesh was not possible. Early painfree after the operation patient was discharged on day 3. FU showed little secretion and infection at umbilicus side due to close preparation treated with conservative treatment.

Conclusion: PPOM is a new minimal invasive technique in ventral hernia repair trying to avoid intraperitoneal mesh position and hopefully its potential complications due to the position. It is more time demanding than IPOM procedures, but gap- free diseection and complete covering of the mesh is not easy to achieve in the learning curve.

V012 - Video - Abdominal Cavity and Abdominal Wall

Minimal Invasive Totally Endoscopic Surgery in Rectus Diastasis with Onlay Polipropilene Mesh and Umbilical Hernias Associated

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Aims: There are many patients who present an umbilical hernia and Rectus diastasis simultaneous. If only the hernia is corrected, we will repair the hernia on a anatomically weak tissue, so the rate of hernia recurrence may increase therefore, it would be suitable to correct both conditions at once. We propose minimally invasive access using a subcutaneous approach.

Methods: We present a 45 years old with umbilical hernia 4 cm size and diastasis recti (subxiphoid 3 cm, 4 cm supraumbilical and 4 cm subumbilical size) 3 trocars in suprapubic position are placed. Supraaponeurotic space is created until the umbilical region. Hernia sac is then released and is reintroduced into the abdominal cavity. after that, the preperitoneal space is created and subcutaneous dissection continues until the subxiphoid region.

A composite mesh is used and placed in preperitoneal position secured by two sutures at the edge of the umbilical defect. The rectus plication is achieved using nonabsorbable suture endostich V -loc n ° 0.

A wide pore low weigth polipropilene mesh is placed in onlay position and fixed with Cianocrylate glue in order to reinforce the plication. Subsequently the navel is fixed to the fascia and suction drain is placed.

Results: The postoperative time course without complications. The drain is removed at 4° day. After 24 months the patiens is completely satisfied with the results. No hernia o diastasis rectus recurrence is seen during follow-up.

Conclusion: Totally endoscopic approach by subcutaneous access is useful to solve both umbilical hernia and rectus diastasis without complications. Meshes should be used in Rectus diastasis more than 4 cm size to avoid recurrences. This minimal invasive access provides high aesthetics results.

V013 - Video - Abdominal Cavity and Abdominal Wall

Congenital Internal Hernia of the Intersigmoid Fossa: A Laparoscopic Approach to a Rare Cause of Intestinal Obstruction

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The intersigmoid hernia is an uncommon type of sigmoid mesocolic hernia and a rare cause of internal hernia. We report a case of a 44 year-old male patient with no prior history of abdominal surgery that presented with an intestinal obstruction. A diagnostic laparoscopy was advised and pneumoperitoneum was achieved using the Veress needle on Palmer's point. The bowel was traced retrograde from the iloececal junction to the transition point at the pelvis. Sigmoid colon was drawn upward and the left surface of the mesocolon was exposed observing a funnel-shaped recess of the peritoneum above the external iliac vessels. The fossa was 1 cm in diameter containing 10 cm of viable small bowel loop.The hernia was reduced and the defect closed with a simple suture. Operative time was 23 min, with a total blood loss of 5 cc. The patient had an uneventful postoperative course and was discharged on day 4. There were no complications or recurrence at follow-up.When an internal hernia of unknown origin is suspected, the use of laparoscopy has proved again to be of use. To our knowledge, there are only **seven** previous reports of laparoscopic surgery of sigmoid mesocolic hernias in the surgical literature. The hernias of mesosigmoid origin are estimated to account for 1–6% of all internal hernias. We herein report a case of successful laparoscopic management of intestinal obstruction due to a congenital incarcerated intersigmoid hernia.

V014 - Video - Abdominal Cavity and Abdominal Wall

Is there a Limit for Emergency Hernia Repair? Laparoscopic Operation of Multi-Chamber, Recurrent, Incisional Hernia

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Introduction: Treatment of recurrent abdominal hernias after previous hernioplasties and other operations poses many problems for surgical team. The method of choice must be tailored to the patient's general condition, the disease advancement, technical capabilities and experience of the operating team. At the same time one should take into account the element of surprise that interventions in emergency always carry.

Methods: We present laparoscopic treatment for the multi-chamber, recurrent, incarcerated postoperative hernia (IPOM Plus) with concurrent inguinal hernia repair (TAPP) and small linea alba defect - hernia as well (IPOM Plus).

Results: The case of 71-year-old female patient taken in the emergency room with symptoms of incomplete intestinal obstruction. The operative history of patient included hysterectomy. Then surgical site established postoperative hernia, subjected to repeated repair operations (2-times hernioplasty without a mesh, 2-times mesh onlay technique, once IPOM). In addition, the patient underwent appendectomy and laparoscopic cholecystectomy. The patient was operated on an ad hoc basis with the typical trocar insertion scheme (5 and 11 mm on the left anterior axillary line, and similarly two trocars on the right side). Inside the peritoneal cavity we found massive adhesions and incarcerated bowel loops in the hernia gates. We also revealed a previously implanted intraperitoneal mesh.

To the amusement of surgeons, after the release of adhesions they identified another two additional hernias, undetected before surgery (one being inguinal and second at the top of the linea alba). Subsequently a hernioplasty at the sites of recurrent hernias, and in linea alba was performed - IPOM Plus method - with closing hernia doors (using reducing seams) and implantation of two nets. Inguinal hernia was managed as typical in TAPP technique. The patient left the hospital on postoperative day 5. Control physical examination and CT showed no recurrence of hernia.

Conclusions: Laparoscopic access, with adequately experienced operating team allows you to perform complex corrective surgery even within the ER.

V015 - Video - Abdominal Cavity and Abdominal Wall

Fractured Mesh as a Rare Cause of Recurrence Post Laparoscopic Ventral Hernia Repair

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Introduction: Incisional hernias are very common and form the second most common type of hernia. Laparoscopic ventral hernia repair (LVHR) is gaining popularity especially for incisional hernias. Bulging after laparoscopic repair remains common and form diagnostic challenge to distinguish between true and Pseudo recurrence in form of seroma or mesh eventration.

Aims: In this study, we present a rare cause of recurrence post LVHR.

Results: In west of Scotland 400 composite meshes are used annually for Laparoscopic ventral hernia repair of either primary or incisional hernias. This is the first time a recurrence due fractured mesh has been reported.

There was no risk factor for recurrence. Patient felts post-operative pain on the right side of the abdomen that disappeared suddenly after six month, followed by bulge and pain in the middle of the abdomen. CT scan suggests eventration of mesh, as mesh and fixing tags appear to retain good position. Patient symptoms continues and decision to operate was depending on clinical examination at the referral centre. Intra operatively the mesh was in good position with intact fixation. After adhesiolysis a whole in the middle of the mesh was discovered as the cause of recurrence. The hole was away from mesh edges and no tags were involved.

The hernia was repaired by placing a larger composite mesh overlapping the old one.

Conclusions: This abstract presents a rare and unusual cause for recurrence post LVHR that might be difficult to diagnose using the standard imaging technique if not listed in the possible cause of radiological appearance.

V016 - Video - Abdominal Cavity and Abdominal Wall

The Lost Stone - Laparoscopic Exploration of Abscess Cavity and Retrieval of Lost Gallstone Post Laparoscoic Cholecystectomy

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Background: Today, laparoscopic cholecystectomy (LC) is considered the gold standard operation for symptomatic gallstones. Gallbladder perforation, which happens in 6–40% of operations, can lead to spillage of gallstones into the abdominal cavity with the possible consequence of long-term complications. The drainage of abscesses and retrieval of lost stones can be done in various ways. We report on two cases where the laparoscopic technique was used to explore the abscess cavity, retrieve the stones, and drain the abscess without entering the peritoneal cavity.

Case presentation:

Case no. 1: A 41 year old woman presented with vague right upper quadrant (RUQ) pain 3 years post LC. Radiologic studies revealed a large abscess close to the liver, adherent to the abdominal wall, and containing two gallstones. An Ultra-Sound (US) guided drain was placed to mark the area of the abscess. Under general anesthesia, laparoscopic exploration of the abscess cavity was done using 5 mm and 10 mm ports, which were inserted into the abscess cavity without entering the peritoneal cavity. The abscess cavity was irrigated and the gallstones were retrieved. A drain was left in the abscess cavity and removed after two days. The patient was discharged home the next day and remains asymptomatic.

Case no. 2: A 74 year old male presented with vague RUQ pain 10 years post LC. Radiologic studies confirmed the presence of an abdominal abscess near the liver and adherent to the abdominal wall. Under US guidance, the area of the abscess was marked. Laparoscopic exploration of the abscess cavity was done in the same technique. During the procedure, there was an air leak into the peritoneal cavity that was drained with veress needle. The patient was discharge home two days after the procedure and he remains asymptomatic.

Discussion: We report a novel technique used to drain abscesses caused by lost gallstones post LC. The use of minimally invasive surgery techniques in order to explore abscess cavities not only helps us to extract the cause for the abscess but also prevents another surgery in the abdominal cavity.

Conclusion: Laparoscopic exploration of an abscess cavity is a feasible technique in order to treat long-term complications of gallbladder perforation post LC.

V017 - Video - Abdominal Cavity and Abdominal Wall

Laparoscopic Repair for Parastomal Hernia: A Case Report

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Aims: Parastomal hernia is a common complication following stoma creation. The incidence varies widely ranging from 0 to 48%, largely dependent on the type of enterostomy created. There are some risk factors associated with its formation (age, obesity, technical failure, malnutrition..) but the exact cause remains unknown. The most are asymptomatic but 11–70% require surgical intervention because of obstruction or incarceration, prolapse, pain, bleeding or appliance leakage.

Methods: A 55-years-old female who was obese (BMI 34) and arterial hypertension. She had undergone MILES with creation of a final colostomy four years ago. She complaint of abdominal pain, prolapse and constipation. She presented a parastomal hernia type 4 of an end stoma. Abdominal TC showed a large parastomal hernia of a stoma with prolapse of the left colon. We perfomed laparoscopic repair for parastomal hernia with a resorbable mesh. Three days after the operation, the patient was discharged without any event.

Conclusions: The advent of laparoscopic surgery in ventral hernia repair has led to many benefits including less pain, shorter hospital stay and faster recovery. The use of mesh in parastomal hernia repair significantly reduces recurrence rates and is safe with a low overall rate of mesh infection. There is no difference in complications that can be directly attributed to mesh choice. Various techniques have been described in the literature to repair these hernias but any of them have demostrated superiority.

V018 - Video - Abdominal Cavity and Abdominal Wall

Tapp and IPOM in a Patient with Inguinal and Incisional Ventral Hernia L3W2

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Aim: Demonstration of TAPP and IPOM tehnics in a patient with combined hernia.

Methods: A 67-years old patient with combined inguinal hernia and postoperative hernia L3W2, postoperative hernia M2,3W2 and gastroesophageal reflux disease (GERD) admitted to the hospital. We used combined TAPP and IPOM techniques for a combined inguinal hernia and postoperative hernia L3W2. Before the time of fixation of the mesh TAPP-technique was used. Composite anti-adhesive mesh 15× 20 was fixed from the bottom to copperhouse ligament and transverse muscle, on the top – closing the hernia defect in the right iliac region. Hernia defect in the epigastric region was closed using 15×20 mesh. We performed Nissen fundoplication for GERD. Time of the procedure was 180 min.

Results: The postoperative period was uneventful, length of hospital stay was 3 days. There is no recurrence of the hernia in 6 months after surgery.

Conclusion: It is effective to use combine TAPP and IPOM techniques in patients inguinal hernia and the hernia L3. When a patient has defects of the abdominal wall in different anatomic regions it is feasible and in some cases advisable to use a 2 mesh implants.

V019 - Video - Abdominal Cavity and Abdominal Wall

Laparoscopic Transabdominal Preperitoneal Repair of Lateral Ventral Hernia (Spigelian)

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Aim: To demonstrate a laparoscopic mesh repair of Spigelian hernia using Transabdominal Preperitoneal (TAPP) technique.

Methods: A patient with an ultrasound diagnosis of a left Spigelian hernia underwent a laparoscopic TAPP mesh repair.

Result & Conclusion: Spigelian hernia is a hernia through the Spigelian fascia lateral to rectus abdominus and medial to semilunar line. Traditionally an anterior approach is used to repair these defects. With the advent of laparoscopic techniques, this hernia can be repaired effectively with a TAPP approach similar to that used for groin hernias.

V020 - Video - Abdominal Cavity and Abdominal Wall

Total Extraperitoneal Herniorrhaphy in One Case of Obturator Hernia with Small Bowel Incarceration

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Aims: Obturator hernia is a rare condition presented according to the degree of bowel obstruction. We should highly suspect in elderly female with small bowel obstruction, but there was no abdominal operation history. Considering laparoscopic approach is limited experience, we decide to try this rather than open approach as first choice. We would transfer to open approach if failure to reduction of small bowel in the operation.

Methods: We performed total extraperitonealherniorrhaphy, bilaterally, in this 90-year-old case.She was initially presented as sudden onset of abdomen pain with vomiting for 1 day. Prominent abdomen fullness with anorexia was also noted. She was admitted at our emergent department and her vital signs were comparable stable without shock sign. She denied any special mis-oral intake foreign body in past few days. There was no peritoneal sign but hypoactive bowel movement was noted. The abdomen plus pelvis computer tomography was done, which showed right side obturator hernia with small bowel obstruction. Under the impression of small bowel incarceration, we arranged emergent surgical intervention as soon as possible.

Results: The intra-operative reduction of incarcerated small bowel was successful. The incarcerated bowel returned its color after reduction. No segmental bowel resection was done eventually. The total operative time was 1 h and 13 min. She was hospitalized for 8 days with smooth oral intake ability till discharge. Four months later followed up at out-patient department, there was no recurrence or ileus sign noted. She could tolerate semi-liquid diet as same as pre-operative condition.

Conclusion: Laparoscopic approach seems feasible and safe in treatment of obturator hernia. But we need to sincerely consider patient's previous operation history, underlying disease, peri-operative lab datas, and degree of small bowel incarceration.

V021 - Video - Abdominal Cavity and Abdominal Wall

Laparoscopic Ventral Hernia Repair with Reliatack®

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Aims: The following video shows the laparoscopic repair of an incisional hernia using a Symbotex® mesh and the new Reliatack® fixation device.

Methods: A 65-year-old woman underwent open cholecystectomy for acute cholecystitis through a midline laparotomy 5 years ago. The patient reported umbilical tumor that had been increasing in size progressively in the last year and occasionally painful. Physical examination revealed a 5 cm epigastric defect in the abdominal wall compatible with an incisional hernia. Laparoscopic eventroplasty was proposed.

Results: Mean operation time was 30 min and the postoperative course was uneventful. Patient was discharge home in two days. With a follow up of three months the patients remains asintomatic without pain or recurrence of incisional hernia. Laparoscopic incisional and ventral hernia repair has been validated through large meta-analysis and, as some literature suggests, with superior outcomes in terms of recurrence and post-operative complication when compared with open surgery. ReliaTack is a new articulating reloadable fixation device for laparoscopic or minimally invasive hernia repair. It provides superior access, stronger fixation and lower cost of care. The new device features a 65-degree articulation and is equipped with screw-like tacks, providing double the strength of other fixation devices available.

Conclusion: The reliatack system allows an angulation that facilitates the placement of the tackers during the laparoscopic ventral hernia repair against other devices.

V022 - Video - Abdominal Cavity and Abdominal Wall

Abdominal Pain Two Weeks After Laparoscopic Bilateral Inguinal Hernia TEP Repair

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A 58-year-old male was admitted to our medical center complaining of diffuse abdominal discomfort. Two week prior to this admission he underwent laparoscopic bilateral inguinal TEP repair in a different hospital. Throughout that peri-operative period he suffered from diffuse abdominal pain, vomiting and reduced passage of stool and gas. He decided then to seek medical advice. Upon his arrival to our ER, His vital signs were within the normal range and the physical examination was only remarkable for mild diffuse abdominal tenderness without muscle rigidity. Plain abdominal X-rays showed dilated small bowel loops with air-fluid levels. A CT scan demonstrated: moderately amount of free fluid, several dilated small bowel loops with thickened bowel wall and also adhesion of small bowel loops to the right inguinal region with the impression that the peritoneum is located posterior to these loops. According to the physical examination together with the imaging studies' findings the patient was brought to the operating room for laparoscopic exploration. A supra-umbilicus 11 mm trocar was inserted along with additional: 5 mm LLQ, 11 mm LUQ and 5 mm RLQ trocars. The abdominal cavity exploration showed: large amount of free fluid, dilated, severely edematous small bowel loops and attachment of several bowel loops to an exposed TEP mesh due to a large tear at the peritoneum adjacent to the mesh. A slow and meticulous sharp dissection was performed in order to release the bowel loops from the mesh. A composite Mesh (SYMBOTEX, Covidien-Medtronic) was installed using tacks and stitches for bridging the gap of peritoneum in order to avoid the recurrence of this pathology. Post operative period was uneventful and the patient was discharged without complains. Two month post operative follow up was unremarkable. This case presentation emphasizes the necessity of avoiding mesh exposure to abdominal viscera such as bowel in laparoscopic inguinal hernia repair. While performing this operation Searching for peritoneal tears should be done.

V023 - Video - Abdominal Cavity and Abdominal Wall

Robot-Assisted Umbilical Hernia Repair: The Retromuscular Position

S. van Cleven, F. Muysoms

AZ Maria Middelares Ghent, GHENT, Belgium

Introduction: Umbilical hernias are a common surgical indication, but without consensus on the standard treatment. Surgical repair includes an open or laparoscopic repair, with or without mesh, and with or without defect closure. Frequently umbilical hernia repair is done with an intraperitoneal composite mesh, either by open trans-umbilical approach or by laparoscopy. This holds a risk of adhesions and chronic pain by penetrating meshfixation. Retromuscular repair allows extraperitoneal mesh placement without the need for penetrating fixation which could lead to less adhesions and less pain. We present a robotic-assisted technique of retromuscular umbilical hernia repair and how robotic surgery could improve our skills.

Case presentation: We present a case of a 64 years old female patient with a symptomatic umbilical swelling after a laparoscopic cholecystectomy in 2014. A robotic-assisted repair was planned by a single-dock approach. Placement of three trocars (8 mm) along the left lateral abdomen was followed by reduction of the hernia. There was a incisional infra-umbilical and a small umbilical hernia. Retromuscular dissection was started by incising the left posterior rectus sheath, separating the rectus muscle from the posterior fascia. Dissection continued from lateral to medial until the linea alba. The posterior sheath was then incised along the midline, entering the preperitoneal space and preserving the linea alba. Dissection was carried across the midline and reenters the contralateral rectus sheath. The fascial defects were closed with a barbed suture followed by placement of a 15×15 self-fixating mesh with the grips towards the muscles. The posterior sheath along the initial incision was closed with a barbed suture. Patient was discharged 2 days after the operation with minimal pain.

Conclusion: Robotic-assisted retromuscular ventral hernia repair allows reconstruction of the abdominal wall, adequate musculofascial dissection, and extraperitoneal mesh placement. This combines the benefits of minimal invasive surgery by evading wound morbidity and the placement of a large sized mesh, while avoiding painful penetrating meshfixation. The flexibility and dexterity of robotic instrumentation facilitates this technique. In view of progress to robotic repair of large ventral or incisional hernias, robotic umbilical hernia repair can contribute to the surgeons robotic training and experience.

V024 - Video - Abdominal Cavity and Abdominal Wall

How to Approach a Sliding Inguinal Hernia Involving a Sigmoid Loop During Robotic Assisted Tapp Repair

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Introduction: In a sliding hernia of the groin the abdominal content is not only herniating through the hernia orifice, but the herniated bowel is part of the hernia sac itself. On the left side this is most often a sigmoidal loop. The repair of a sliding hernia can be challenging because reduction of the hernia sac can be cumbersome and the herniated sigmoid is at risk of injury during the preperitoneal dissection.

Case presentation: We present a case of a 76 years old male patient with a large, symptomatic inguinal swelling at the left side. Patient had no previous surgical history. Clinical examination revealed a large, reducible inguinal hernia. A robotic assisted minimal invasive transabdominal preperitoneal approach was planned.

A robotic-assisted repair was done by a single-docking approach. Three 8 mm trocars were placed (umbilical, left and right flank). Inspection showed a indirect sliding hernia of sigmoid colon at the left side. No attempt at reduction of the sigmoid loop was done. Instead, the peritoneum was incised above the internal inguinal ring at the level of the epigastric vessels. Medial dissection was continued to the pubic bone and laterally to the oblique abdominal muscles. Preperitoneal reduction of the hernia sac was performed after the hernia sac was separated from the vas deferens and testicular vessels. Preperitoneal dissection was continued caudally until the hernia was completely reduced and sufficient place was created for mesh placement. A 15×15 self-fixating mesh (Progrip™) was placed over the inguinal ring with the grips towards the muscles. The peritoneal flap was closed with a barbed suture (V-loc 3/0). Operative time was 42 min from skin incision to last skin suture. Patient was discharged from the hospital after 24 h without need for analgesia.

Conclusion: Our approach to sliding inguinal hernias involving a sigmoid loop is to dissect from above in the preperitoneal plane thus reducing the sigmoid loop together with the hernia sac. We think the optimized visualization and the flexibility of the robotic instruments facilitate to perform this technique by a minimal invasive approach.

V025 - Video - Abdominal Cavity and Abdominal Wall

Laparoscopic Re-positioning of Percutaneous Endoscopic Gastrostomy Tube

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Aims: To demonstrate how laparoscopy can be of extreme use in treating comlications related to previous interventions, in this case misplaced PEG(Percutaneous Endoscopic Gastrostomy Tube).

Methods: A video presentation showing the case presentation, key steps of the procedure and the technical tips focused on.

Conclusion: With advanced laparoscopic skills, complications of previous interventions can be managed. This can be of extreme value in frail patients with high risk of open/major surgeries.

V026 - Video - Abdominal Cavity and Abdominal Wall

A Case of Parastomal Hernia Around Double Barrel Transverse Colostomy Repaired By Laparoscopic Surgery

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Introduction: Only a few cases about parastomal hernia repair for double barrel colostomy were reported, then there were no established ways of repair it. This time we were successfully possible to repair it by improving modified Sugerbaker way under laparoscopy.

Case: A 78 year-old man who had a transverse double-barrel colostomy was referred to our department on regular check up. He complained about swelling around colostomy and prolapse of colostomy 3 months after colostomy surgery and we diagnosed parastomal hernia with stomal prolapse. These symptoms were gradually getting worse and made it difficult to stick ostomy pouch. We tried to perform laparoscopic parastomal hernia repair.

Surgical technique: The patient was placed in supine position. An operator and a camera assistant were on his right side. 12 mm camera port was inserted on the right subcostal area at the anterior axillary line. 5 mm ports were placed on the same anterior axillary line halfway between the costal margin and the superior iliac crest. Other 12 mm ports were placed the superior iliac crest. After complete adhesiolysis of the anterior abdominal wall is performed, we detected a hernia cavity around transverse colostomy. We fixed proximal and distal transverse colons each other, then fixed them on abdominal wall. After that, we inserted a mesh (Paritex ™ Composite Parastomal Mesh, Covedien, Medtronic, USA) and fixed it on abdominal wall around the hernia cavity with a fixation device (AbsorbaTack™, Covedien, Medtronic, USA).

Outcome Operation time is 106 min. Blood loss is 0 ml. He was discharged from the hospital without a large problem postoperative day 9 after surgery.

Conclusion: This method is safe and a versatile procedure and can be adapt to other parastomal hernias around double barrel colostomy.

V027 - Video - Abdominal Cavity and Abdominal Wall

Laparoscopic Treatment of an Incarcerated Obturator Hernia

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This video shows laparoscopic treatment of an incarcerated obturator hernia.

An 84 years old woman was hospitalized for nausea, vomiting and abdominal pain, started 24 h before. She had a weight of 41 kg and a BMI of 18.5 kg/sm. She had had 3 pregnancies in her life. Since 3–4 months ago she complained of intermittent pain at right thigh, especially while evacuating. She had had no previous abdominal operations. A CT revealed proximal small bowel loops dilatation with an obstruction of a distal ileal loop, because of an incarcerated right obturator hernia. There was a moderate abdominal free fluid quantity in Douglas pouch.

An explorative laparoscopy was carried out, that confirmed the presence of an incarcerated right obturator hernia. There were no adhesions or other potentially obstructive lesions. We did not find other associated hernias. A 3–4 cm long intestinal segment was herniated through a 1 cm ring. With cautious traction, the ileal loop was retracted in abdominal cavity. It was ischemic but after 20 min it regained a favourable hyperaemic aspect. Because of potential septic risk (free fluid in abdominal cavity, ischemic intestinal content of the hernia sac, presence of very dilated intestinal loops) we choosen a simple suture as reparative technique, instead of a prothesis placement. The hernia sac and hernia ring were sutured with a single "X", multifilament non resorbable stich. Postoperative period was uneventful. Patient had a normal intestinal activity after postoperative day 3 and was discharged 4 days after operation. At two months follow up she was asymptomatic.

Obturator hernias are rare (0.05–1.4% of all hernias). They tends to occur in elderly, emaciated and multiparous females. They are often diagnosed when complicated, because clinically difficult to appreciate. Delay between symptoms onset and surgery is a strong prognostic factor of mortality and morbidity. CT is an effective tool for diagnosis, but in many cases obturator hernia is an intraoperative finding after an esploratory laparotomy. Laparoscopy allows an effective diagnosis and treatment of obturator hernia and diagnosis of other occult hernias, that are frequently associated.

V028 - Video - Clinical Practice and Evaluation

Features of Recurrent Hiatal Hernia Treatment. Experience of 13 Operations

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Aim: To analyze post operation results in patients with recurrent hiatal hernia. Evaluate benefits of different surgical methods.

Methods: From 2006 to 2016, we performed 405 surgeries in patients with hiatal hernia. 395 patients had sliding hiatal hernia and 20-paraesophageal hernia. We performed laparoscopic surgery in 363. Among them 329 – Nissen-Rossetti fundoplication, 31- Toupet fundoplication and 3 gastropexy. All 52 patient operated by open method underwent Nissen-Rossetti fundoplication. In 19 patients, we found a recurrence of hiatal hernia. All patients with recurrent hiatal hernia noted a strong chest pain, restoring preoperative complaints in 1–2 months after surgery, the failure of conservative treatment. All patients within 1–2 months after initial operation started heavy physical activity. The patients' age was from 28 to 70 years. Among them, 11 men and 2 women. Thirteen of them agreed to the operational treatment. In 6 patients (group A) laparoscopic surgery performed with using of mesh. In 7 patients (Group B) - open way surgery performed without use of mesh.

Results: There was no mortality in our patients. There were no intraoperative complications in A group (laparoscopic surgery), but in B group (open surgery), in one patient we had esophagus perforation, left hepatic vein and diaphragm injury. Four days after surgery, one patient from A group noted difficult liquids passage. We performed 2.0 cm balloon dilatation plus antiedema therapy. After 12 days patient went home with improved. During the operation we have revealed stitches on diaphragm crus behind the esophageal in 5 patients, cuff remained fixed to the diaphragm in 9 cases. In one patient during the operation, we found cuff fixed to the diaphragm and stomach capacity of 1.0 liters found itself in thorax above the cuff. In both groups, we tried to restore the antireflux mechanism: 5 – Nissen-Rossetti fundoplication, 2- Toupet fundoplication and 2- Dor fundoplication. In all laparoscopic patients we use mesh.

Conclusions: In our study we show that open way somewhat easier for the surgeon, but laparoscopic way was much more safety. Considering the benefits of early postoperative period, you will notice a significant advantage of laparoscopic hernioplasty.

V029 - Video - Clinical Practice and Evaluation

Three Ports Laparoscopic Assisted Right Hemicolectomy for Crohn's Disease Of Ileocaecal Junction

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Aim: The aim of this presentation is to present laparoscopic assisted right hemicolectomy with three ports and small transverse periumbilical laparotomy for removal of specimen and creating ileocaecal end to end anastomosis, for s Crohn's disease of ileocaecal junction.

Method: Five consecutive patients during the year 2016 with colonoscopic and abdominal CT confirmation of stenotic ileocaecal junction, caused by Crohn's colitis, are subjected to laparoscopic assisted right hemicolectomy. Three male and two female patients, previously treated conservatively, aged 22 to 30 years, were admitted to surgical department day before the surgery, after endoscopic examination and confirmation of ileocaecal stenosis. None of them didn't received any mechanical bowel preparation, enemas or laxatives. Per oral nutrition were stopped at midnight, nine to twelve hours' prior the operation. Antibiotic prophylaxis started one hour before surgery with Cephalosporin I'st generation and Metronidazole. Laparoscopic part of operations was conducted through trans umbilical 10 mm optical port, 10 mm left epigastric, and 5 mm left hypogastric port, dissection device used were Harmonic scissors and ligation of ileocaecal vessels were done with standard titanium clips. Specimen extraction site were small, 4 to 5 cm long transverse right periumbilical laparotomy with transection of rectus muscle. All ileocaecal anastomoses were open hands sewn, end to end continuous suture in one layer. Mobilization of patients started two to five hours after the surgery, postoperative per oral nutrition were initiated at day one, abdominal drain removal at day two or three.

Results: All these five young patients were discharged on postoperative day 3 or 4. We didn't have any postoperative readmissions or early postoperative complications. All operations were performed by the same surgeon and one cameraman. Operative time were 55 to 90 min. (average 65 min.). Blood loss were 30 to 50 ml (average 35 ml). Patients come to regular controls and we noticed no complications so far.

Conclusions: Laparoscopic assisted right hemicolectomy trough three ports, minimal transverse periumbilical laparotomy for specimen extraction and hands sewn end to end anastomosis is safe procedure for Crohn's colitis of ileocaecal junction.

V030 - Video - Different Endoscopic Approaches

Totally Laparoscopic Colonic Resection for Splenic Flexure Cancer

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Aims: Laparoscopic splenic flexure resection is a challenging and not really standardized procedure. We show our technique for the totally laparoscopic resection.

Methods: All patients underwent virtual colonscopy and CT for stadiation and to check the position of the tumor and of the vessels of the splenic angle. We adopted classical Lloyd-Davis. The patient was kept in anti-Trendelenberg position and tilted 20 degrees rightward. Four to five trocars were placed. The primitive root of left mesocolon was incised from bottom to top, starting at the promontory and arriving at the duodenojejunal juncture. After inferior mesenteric artery identification, left colic artery was isolated and tied up at its origin. The left Toldt fascia was dissected from the prerenal fascia, from medial to lateral. Inferior mesenteric vein was identified close to the inferior pancreatic edge and closed off between clips. Transverse mesocolon was divided right to left along the inferior pancreatic edge, lowering the splenic flexure of the colon. The left paracolic gutter was incised bottom to top, joining the previous dissection of the left Toldt fascia. Division of splenocolic and gastrocolic ligaments from left to right completed splenic flexure. The great omentum was divided using Harmonic scalpel and its left part was removed en bloc with the splenic flexure. The left branch of middle colic artery was ligated and divided as well as the ascending branch of the first sigmoid artery. Descending and transverse colon were transected by linear stapler. A stitch was used to approximate the two stump and, after making to enterotomies, an isoperistaltic side-to-side completely intracorporeal stapled anastomosis was make. The remaining enterotomies were closed in a double layer continue intracorporeal suture. The specimen was routinely extracted through a suprapubic mini-laparotomy.

Results: From 2011 to 2016 we treated 24 patients. We had only one grade III complication: postoperative acute pancreatitis with fluid collection, treated with re-operation. The other patients went home in V post-operative days.

Conclusion: The operation is difficult and with challenging part, especially fo r the anastomosis. But the standardization could allow a diffusion of the technique.

V031 - Video - Different Endoscopic Approaches

Endoscopically Assisted Completion Proctectomy: Video Presentation of a New Technique

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Aim: Completion proctectomies can pose significant challenges to surgeons, especially in the presence of chronic pelvic inflammation with ill-defined dissection planes. By adapting the transanal Total Mesorectal Excision (taTME) technique, we describe technical details of laparoscopic completion proctectomy with trans-perineal endoscopic assistance using the GelPOINT mini access platform (Applied Medical, Rancho Santa Margarita, California, USA).

Method: A 74-year-old gentleman underwent laparoscopic completion proctectomy with trans-perineal assistance, three years following subtotal colectomy for ulcerative colitis. The abdominal team performed the adhesiolysis and mobilization of the apex of the rectal stump down to the level of the vesicles anteriorly and 6 cm from the puborectal sling posteriorly. Closure of the anus with a pursestring suture was performed, followed by a small elliptical incision guided by the outer border of the external anal sphincter. An intersphincteric dissection was performed until placement of GelPOINT mini platform could be accommodated. A pneumopelvis was created with AirSealÒ insufflation system (SurgiQuest Inc., Milford, Connecticut, USA). Dissection using laparoscopic instruments inserted through the trans-perineal opening, was continued close to the rectum leaving the mesorectum in place, until connection with the abdominal team was made. Synchronous abdominal and trans-perineal dissection was then possible with each team guiding one another to ensure an accurate dissection. The specimen was extracted through the Gel-POINT mini wound protector and perineum closed in multiple layers.

Results: Total operative time was 240 min, including 90 min for the transanal phase. Completion proctectomy was performed without injury to surrounding tissues or significant bleeding. The GelPOINT mini platform was stable and the Alexis wound protector accommodated the dimension of the perineal opening. Airseal insufflation provided excellent exposure and clear visualization of the dissection plane from "bottom-up" allowing accurate dissection and avoidance of injury to surrounding structures. The patient made an uneventful recovery and discharged six days post-operatively.

Conclusion: This case demonstrates that endoscopically assisted completion proctectomy using the GelPOINT mini platform is feasible in complex procedures. A different view point of the dissection plane as well as synchronous abdominal and trans-perineal operating may allow a more accurate dissection and shorter operating time.

V032 - Video - Different Endoscopic Approaches

A Hybrid Endoscopic and Laparoscopic Trans-gastric Approach for Pre-pylorus Benign Lesions

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Aim: Gastric lipomas are rare tumors, 2%–3% of all benign gastric tumors. They are usually of submucosal origin. Lesions near the gastro-esophageal junction or near the pylorus still pose a surgical challenge. Several novel approaches have been described in the literature for resection of gastric masses through minimally invasive surgical intervention, which included endo-laparoscopically assisted gastric resection for lesions. We present a case of incidental lipoma near the pylorus that enlarged over a period of 1 year to more than 3 cm, the lesion was not feasible for endoscopic resection. A hybrid endoscopic and trans-gastric laparoscopic procedure was performed.

Method: A video presentation of the operation with all the pitfalls that make the lesion accessible for safe enculation.

Results: The operation was uneventful; the patients were discharged on the third post-operative day.

Conclusion: Trans-gastric laparoscopic enucleation with the aid of endoscopy is a safe alternative for benign lesions that are not feasible for pure endoscopic resection. The method described in this case eliminates the risk of perforation, and introduces new possibility in the surgical intervention of submucosal gastric tumor near the pylorus.

V033 - Video - Different Endoscopic Approaches

Transanal Total Mesorectum Excision (TATME). Initial Experience in a Regional Hospital

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Introduction: Laparoscopic surgery of the rectum, especially in the lower third and narrow pelvis, is technically difficult, which can be translated into both oncological results (for the possibility of having both circumferential and distal positive margins, with regular multiple stapling), as of quality of life, with a higher percentage of autonomic pelvic lesions and fewer restorative surgeries of intestinal transit.The transanal endoscopic approach may offer technical and oncologic advantages because it provides better anatomical visualization and facilitates the obtaining of tumor-free distal margins.
Objective: We present the preliminary experience of our group in the total excision of the transanal mesorectum (TaTME). A video of the surgical technique is presented based on the initial experience in 17 cases applying this technique, all in Rectal Cancer after neoadjuvant therapy.
Comments to the video: Technical comments and analysis of the advantages and disadvantages of this approach are provided based on the literature and our experience.

V034 - Video - Different Endoscopic Approaches

Technique of Suture Reinforcement During Sleeve Gastrectomy

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Aim of the study: The video shows a technique of suture reinforcement during sleeve gastrectomy.
Methods: Sleeve Gastrectomy (SG) is a restrictive bariatric procedure in which the greater curve of the stomach is removed and a tubular stomach is created. Our video shows a sleeve gastrectomy performed in a woman of 45 years old with a BMI of 42.8. In this video we used a self retaining hepatic retractor, automated linear stapler and suture reinforcement.
Results: Post-operative course was uneventful, and the patient was discharged on 3th pod. Patient's weight loss percentage at 12 months is 65%.
Conclusions: We suggest that hepatic retraction allows a better view of the angle of His, the electric drive gives stability during cutting and stapling, and reiforcement reduces postoperative bleeding and formation of adhesions.

V035 - Video - Different Endoscopic Approaches

Gastroscopic-Laparoscopic Removal of Foreign Body From the Stomach

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Its about 15 Years old boy who sawllow a foreign body under alcohol. He complain epigastric pain for about 15 days. Through diagnostic Gastroscopy was many Foreign bodies founded which were through gastroscopy not removable. We could through the cooperation between GIT and Lap. surgeon remove these many Foreign bodies (see the video) Pat. could take oral meal after doing gastrogarfin X-ray at the third day. He was discharged at the 5th postop. day.

V036 - Video - Different Endoscopic Approaches

Different Types of Intracorporeal Anastomosis

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Aims: The intracorporeal anastomosis has gradually mature thanks to the advancements of laparoscopic surgical instruments and the accumulation of operative experience.
Methods: We present different kind of intracorporeal anastomosis which we do in surgery: esophagoyeunostomy anastomosis after totally laparoscopic total gastrectomy, gastroyeyunostomy anastomosis after distal gastrectomy, intracorporeal anastomosis in laparoscopic right colectomy and intestinal anastomosis after Bilroth I gastrectomy.
Conclusions: The most of the recent studies concluded that intracorporeal anastomosis in different kind of surgery are safe and improve cosmesis and results in better postoperative recovery outcomes without increasing intraoperative and postoperative complication. But it is important that these must be done by expert surgeons. Additional well structured, prospective randomised trials are needed to confirm all the advantages regarding postoperative results.

V037 - Video - Different Endoscopic Approaches

TAMIS Beyond Pure Rectal Lessions: Tips and Tricks for Adenomas at the Rectosigmoid Junction

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Introduction: TAMIS has become an attractive aternative to rectal tumors non-resectable by endoscopy. New instruments has been developed due to the initial interest of surgeons for single port approach, being currently used for the transanal approach either for total mesorectal excision or for resection of pre-malignant rectal lessions. If these lessions are at the rectum, the entire rectal wall is exised, being discussed nowadays if the wall should be closed. Problems begin when lessions are at the upper rectum at the recto-sigmoid junction since a perforation into the abdominal cavity could be taken place.

Method and video: A 77-year-old woman with previous medial history of arterial hypertension on medication was seen for changes on her intestinal transit. Physical examination remains normal. Colonoscopy shows a plane villous adenoma polyp (carpet like) at 10–12 cm of anal margin of 3–4 cm diameter which occupied more than a half circumference of the rectum. RMN is informed as excentric grown of the wall of upper rectum/ retco-sigmoid junction without any adenopathy. Endoanal ultrasound is considered to stadified de tumor with result of T1 with reactive adenopathy. After the study TAMIS is indicated to remove the polyp.

During surgery a single port (SILS) was placed at the anal verge, being corroborated the findings showed in colonoscopy being the polyp located in the upper rectum/rectosigmoid junction, where the rectum curves to become sigmoid, taking three/fourth of the lumen. The area of dessection is marked with cautery and the polyps start to be excised with the whole rectum wall. To guarantee the closure of the wall and avoid a perforation into the abdominal cavity difficult to close a V-loc suture was used. The strategy was to be closing the gap while the excision was performed since the V-loc guarantee to maintain the tension of the suture and the gap closed.

Patient was discharged 48 h later and the final histological exam showed the presence of an adenocarcinoma T1.

V038 - Video - Emergency Surgery

Emergency Repair of Bochdalek's Hernia

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Aims: Bochdalek's hernia is a type of congenital diaphragmatic hernia. In adulthood is extremely rare and requires a fastidious surgical repair, the failure of which might result in a recurrence with sever complications. We report a case of a gigant, left Bochdalek's hernia that presented with bowel obstruction and require urgent laparoscopy.

Methods: We present a case of a 67-year-old female with digestive symptoms of slight intensity for many years. She was admitted to our service with epigastric pain, vomits and constipation. Posteroanteior X-ray of the thorax demonstrated the presence of the left colon in the thoracic cavity. This was confirmed by abdominal CT. The patient left colon and omentum. After the lysis of adhesions, we could reduce the hernia. Tension-free primary approximation was accomplished with nonabsorbable suture. The patient recovered well and was discharged home 6 days postoperatively.

Conclusions: Various laparoscopic techniques have been reported; however, the optimal approach for the best outcome is still unknown due to the rarity of the condition Given the favorable outcomes for laparoscopic giant paraoesophageal hiatal hernia repair, we would recommend that laparoscopy should be considered. Some authors suggest repairing the defect using a mesh, while some favour suture repair. The choice of repair depends on the size of the defect, as larger defects would not generally be possible to repair with suture.

V039 - Video - Emergency Surgery

Laparoscopic Repair of a Triple Post-traumatic Diaphragmatic Injury

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Aim: Laparoscopy is a currently the gold standard for ruling out/ruling in diaphragmatic injuries in case of thoracoabdominal penetrating trauma, in hemodynamically stable patients. Its diagnostic and therapeutical role is well documented. Notwithstanding, the laparoscopic approach for diaphragmatic injuries is considered challenging. The goal of this report is to show feasibility and technical aspects of the laparoscopic treatment of a strangulated diaphragmatic hernia with three muscular tears.

Materials and Methods: We report the case of a 45 year-old man was admitted to the ED, in shock and severe respiratory distress. He was involved in road accident four weeks earlier, suffering multiple left ribs fractures, hemothorax and an amyelic fracture of the body of D10 vertebra. At that time, chest CT and chest X-ray did not show any sign of diaphragmatic injury. At re-admission, the chest X-ray showed the stomach in the left hemithorax, with hemo-pneumothorax and right dislocation of the mediastinum. A chest drain obtained partial recovery of both hemodynamics and respiratory distress. A thoracic CT confirmed a large diaphragmatic tear, with herniation of more than 2/3 of the stomach. Urgent surgery was undertaken.

Results: A 5 ports laparoscopy confirmed the diagnosis of diaphragmatic hernia. Reduction of the strangulated stomach required a pre-cut near to the upper border of the apparently unique laceration. After gastric hernia reduction, three radial diaphragmatic tears were clearly found, with a length of 6, 3 and 1 cm respectively. Partial re-expansion of the lower pulmonary lobe was controlled before the deployment of a dependent left thoracic drainage. Repair of all muscular tears was performed with running sutures. Nonabsorbable monofilament was used for the longest and the shortest lacerations, an absorbable barbed stitch for the 3 cm long tear. Recovery was uneventful.

Conclusion: Laparoscopy is the ideal approach for acute isolated diaphragmatic injuries in hemodynamically stable patients, and could be successful even in case of multiple lacerations and strangulated hollow viscus.

V040 - Video - Emergency Surgery

Laparoscopic Treatment of Colonic Perforation Related to Colonoscopy

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Aims: Iatrogenic colonic perforation is one of the most serious potential complications of colonosocopy. Standard management is surgical repair. No prospective data exist to clearly define the indications for laparoscopic repair.To reduce the invasiveness of major surgery and avoid the risk of failure, we introduce laparoscopic technique to deal with iatrogenic colonic perforation.

Methods: A 70-year-old man with right colon perforation after angiodysplasia cauterization during a colonoscopy. The perforation was diagnosed shorthly after the procedure because of symptoms and signs of perforation.. CT scan showed pneumoperitoneum associated to abdominal pain.

Results: The patient underwent surgery four hours after colonoscopy. We perform a diagnostic and therapeutic laparoscopy. Fecal matter was not identified in the peritoneal cavity. Local peritonitis was mild. The laceration was oversewn with simple suture using intracorporeal endoscopic knot technique. The postoperative recovery was rapid and uneventful.

Conclusion: Iatrogenic colonoscopic perforation is a serious but rare complication. It's early recognition and treatment is essential. Laparoscopic treatment seems to reduce the invasiveness and morbidity of major surgery. At the same time, it is more definitive than conservative treatment.

V041 - Video - Emergency Surgery

Laparoscopic Total Gastrectomy of Stomach Necrosis After Acute Dilatation in Young Female With Bulimia Nervosa and Type I Diabetes Mellitus

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Acute gastric dilatation can have multiple etiologies which may lead to ischemia of the stomach. And it is a rare but severe complication of anorexia nervosa. It is often associated with high mortality, and operative intervention is avoided unless medical management fails to control sepsis, or patients develop gastric perforation. Early diagnosis and treatment are highly important as the associated morbidity and mortality rates are high. We present the case of a 21-year-old female with type 1 diabetes who had bulimia nervosa. She was treated with antibiotics, bowel rest, and close observation. Despite the aggressive medical treatments for a month, her condition aggravated. Finally, medical doctors requested emergency surgery due to pan-peritonitis with septic condition. We here present a rare case of gastric dilatation leading to gastric necrosis. Our experience suggests that laparoscopic surgery could be an effective method to improve the surgical outcomes of acute gastric dilatation with infarction and necrosis with minimization of wound and improving of recovery period.

V042 - Video - Emergency Surgery

Rare Case of Strangulated Internal (Treitz) Hernia: Laparoscopic Herniorrhaphy

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50-year old male patient was admitted to the hospital with upper left quadrant pain and nausea.

Prior patient were addmitted in hospital by sigmoid diverticulitis, conservative treatment had good results.

3-year later patient had involved in a traffic accident without any serious injuries.

Patient had not any abdominal surgery before.

After addmission at primary X-ray was not any signs of surgical pathology.

Leukocytosis – $11*10^9$/l, Amylase – 50E/l.

Dynamic monitoring was carried out during the 10 h. After this observation patient had single vomiting, pain and another signs of high ileus.

Single intestinal loop with signs of ileus were at X-ray.

At emergency CT-scan was dilated first intestinal loop without significant signs of strangulations.

We decided to perform emergency laparoscopy.

At laparoscopy we identified intestinal strangulation in Treitz pocket.

Hernia ring was consisted of colonic mesentery, inferior mesenteric vein, Treitz ligament, fascia Toldo.

Hernial ring was divided in lateral edge (inferior mesenteric vein).

Half of the small intestine were strangulated in hernia sac without necrosis. intestinal obstruction has been removed.

Hernia sac were sutured by continuous suture without plasty.

Postoperative period were without any complication.

The patient was discharged on day 3.

V043 - Video - Emergency Surgery

Safety of Johan Forceps as Endoloop Knot Pusher for Laparoscopic Appendicectomy: is it Feasible?

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Background: A variety of methods are used to secure the base of the appendix. The current study is a follow up of our published technique of Johan forceps as endoloop pushers for laparoscopic appendicectomy.

Aims: To evaluate the safety and cost effectiveness of this technique.

Patients and Methods: A prospective cohort study was conducted including all patients who underwent laparoscopic appendicectomy by this technique between 2012 till 2015. A number of registrars and consultants were trained in wet lab followed by supervised appendicectomy to secure the base of the appendix with three standard extra-corporeal endoloops using Johan's forceps. Demographics, operative findings, post-op stay, complications and readmissions were recorded & analysed.

Results: Total number of patients was 166 and included 110(66%) males; with an age of *24 (14–77). Grossly inflamed appendix (including perforation, localised abscess) was noted in 76% of cases, while 20% had normal appendix. There were no peri-operative complications. The post-op stay was *1(1–7) days. There were no cases of stump leak or caecal trauma. The only reported complication was wound infection 9(5.4%) which was managed conservatively. There were 11 re-admissions all unrelated to the surgical technique. A total of nine registrars and consultants were surveyed who agreed with the safety, feasibility and easy reproducibility of this cost effective technique.

Conclusion: Our series involving the use of Johan forceps as endoloop knot pusher shows that it is a feasible and safe technique with promising results. Training of surgeons belonging to different tiers without any complications confirms its safety profile.

*median.

V044 - Video - Emergency Surgery

Veress Needle Insufflation in the Setting of Anterior Abdominal Wall Stab Wounds

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Background: The optimal algorithm for evaluating patients with anterior abdominal stab wounds (AASW) is not clear and has been a topic of discussion for years. Currently, the work up and management of penetrating anterior abdominal wall trauma may involve the decision to proceed immediately to surgery based on the presentation of the patient, or the work up may involve local wound exploration (LWE), focused abdominal sonography for trauma (FAST) exam, CT scan, or serial abdominal exams. Here we discuss an observational sign utilizing the Veress needle intra-abdominal insufflation test that can be used in conjunction with the current AASW algorithm, to rule in peritoneal violation.

Methods: Patients admitted to our Level 1 trauma center with penetrating AASW were evaluated using LWE, FAST, or CT scan followed by Veress needle insufflation and DL for suspected intra-abdominal injuries. These cases were retrospectively evaluated for the efficacy of Veress needle insufflation as an observational test for peritoneal violation.

Results: Upon intra-abdominal insufflation using a Veress needle to a target pressure of 15 mm Hg, all patients with peritoneal violation were found to have CO 2 escape from their wounds. The remaining patients with no violation to the peritoneum did not have any appreciable CO 2 escape.

Conclusion: Utilizing our technique of intra-abdominal insufflation combined with monitoring for CO 2 escape, we were able to successfully identify all patients with peritoneal violation and rule out those without injuries. With further research, our technique can be used safely, accurately and in a timely manner to stratify patients for the need of further diagnostic and interventional procedures.

V045 - Video - Emergency Surgery

Local Experience of Emergecy Laparoscopic Service - Malta

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Aim: The aim of the study is to present feasibility of advanced laparoscopic approaches to different surgical emergencies.
Methods and Materials: Dei Hospital in Malta is the only national hospital that caters for a population of 500,000 people. A laparoscopic service is available for elective procedures. However some laparoscopic emergency procedures are done out of working hours.
The average yearly surgeries performed at Mater Dei Hospital rose to 54,000 in 2016. The laparoscopic emergency service was started by the appointment of new consultants in 2012, by one surgical consultant. We have performed several laparoscopic procedures – laparoscopic Hartmann's procedure, primary diverticular disease resection and anastamosis, laparoscopic appendicectomies, laparoscopic surgery for perforated duodenal ulcers and for small & large bowel intestinal obstruction, as well as laparoscopic surgery for strangulated inguinal hernias and obstructed ventral hernias.
Results: In this short video presentation we would like to present the most common procedures done laparoscopically at Mater Dei Hospital focusing on emergency surgery - this includes a Hartmann's procedure, small bowel obstruction surgery, peptic ulcer surgery, colonic resection for Crohn's disease and diaphgragmatic & ventral hernia repair. Despite the average ASA score of III - all of our patients recovered well - with no post operative deaths.
Conclusion: Despite the small cohort of patients & limited exposure to large volume of laparoscopic elective work, the emergency laparoscopic service in a low volume hospital is safe & feasible.

V046 - Video - Emergency Surgery

Laparoscopy Assisted Multi-stage Treatment of Intestinal Ischemia

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Background: Intestinal ischemia incidence is increasing worldwide due to population ageing. Its morbidity and mortality are high and more effective and less invasive treatments are required.
Aim: We aim to present the minimally invasive, multi-stage management of a right colon ischemia.
Results: We present the case of an 80 years-old female with metabolic syndrome and cerebrovascular disease. She was brought to the ED with abdominal pain and bloody stools. She was hypotensive, with abdominal distention and peritoneal signs. She had lactacidemia, leucocytosis and elevated CRP. The angioCT revealed ischemia of the right colon. We proceeded to laparoscopic right colectomy with no anastomosis. At 48h we repeated laparoscopy, revealing progression of the ischemia in the transverse mesocolon. Ischemic areas were resected assisted by laparoscopy and a terminal ileostomy was matured. The patient eventually recovered and was proposed to ileostomy closure 6 month after the acute event. This surgery was assisted by laparoscopy with an extracorporeal ileo-transversostomy. The patient recovered without incidents and is currently alive and well.
Conclusion: In selected patients with an experienced surgical and anaesthetic team, intestinal ischemia might be managed with minimal aggression.

V047 - Video - Emergency Surgery

Laparoscopic Treatment of Caecal Fistula During Appendectomy. Is it Safe?

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Aims: Is laparoscopic treatment of caecal fistula produced and noticed during laparoscopic appendectomy safe and feasible?
Methods: We would like to present 2 cases of 2 male patients of 37 and 60 years old that presented with signs and sypmtoms of acute appendicitis. Both were proposed for laparoscopic appendectomy and during surgery, in both cases incidents occurred: caecal fistula. The surgeons decided to continue with the laparoscopic treatment of that incident. In one case the fistula was closed by using 2 linear staplers : black and blue cartridge leading to partial resection of the caecum, even though the surrouding tissue was friable and inflamed and in the other, endoloops were applied to close the gap.
Results: The patients were released in the 4th preoperative day, 2 days longer than the normal hospitalization period. Flatus and normal bowel movements were recorded in the 2nd and 3rd day. Drains were removed before discharging the patients. Operative time was longer in both cases. No early or late complications were recorded. Postoperative follow-up with CT scan and US at one month did not show any abces or intraperitoneal fluid and the caecum was normaly opacified.
Conclusion: From our small experience with caecal fistula, we concurred that laparoscopic treatment is feasible and depending on the experience of the surgeon, there might not be the reason to convert to open surgery.

V048 - Video - Emergency Surgery

Thoracoscopic Longitudinal Esophageal Suture Repair After Iatrogenic Proximal Migration of the Expansion Gastric Balloon

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Introduction: Expansion gastric balloons are used in the treatment of obesity. One of the risks is accidental swelling of the balloon proximal the stomach with the rupture of the esophagus.
Aim We present a case report 46 years old female patient who was admitted in emergency after iatrogenic esophageal rupture due to accidental migration of the expansion gastric balloon during upper endoscopy. The patient presented with pneumothorax, intubated, hemodynamically stable.
Results: We practiced a 4 trocars approach. The lesion was a longitudinal dilaceration on anterior surface having 10 cm in length starting from 2 to 3 cm above esogastric junction until 2–3 cm below the crossing with azygos vein. The anesthetist inserted a Faucher tube transoral conducted thoracoscopiccaly into the stomach. We practiced thoracoscopic longitudinal suture repair with 2 V-lock 3–0 sutures using as tutore the Faucher tube. We ended the surgery with thoracic drainage and feeding jejunostomy. We removed the Faucher tube after 2 weeks. The patient was discharge after 3 weeks without surgical complications.
Conclusion: Thoracoscopic approach in traumatic lesion of the esophagus is feasible and safe. It is recomandable to try a minimally invasive approach in order to avoid complications of the thoracotomy.

V049 - Video - Emergency Surgery

Large Bowel Obstruction Due to Self-Locating Peritoneal Dialysis Catheter. Laparoscopic Approach

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Aim: Continuous ambulatory peritoneal dialysis (CAPD) is an effective method of renal replacement therapy. Since Tenckhoff described the permanent silicone peritoneal catheter fifty years ago, a wide variety of new models with functional modifications have been designed. Complications after dialysis catheter implantation include acute intestinal obstruction, which is by no means a common complication.

Methods: We report a 55-year-old patient, without other surgical background, who had end-stage renal failure due to IgA glomerulonephritis. While waiting for kidney transplantation, the patient initiated on CAPD in February 2016, using a Tenckhoff catheter, which was functional until three months later. This catheter, placed in the right side of the abdomen, was removed, and a new Di Paolo self-locating catheter was disposed in the left side. Optimal functionality wasn't achieved, though. In September 2016, the patient presented with features suggestive of intestinal obstruction. CT scan described a collapsed colon after the crossing with the catheter and secondary distension of bowel loops. Laparoscopic approach was made using two 12 mm and one 5 mm trocars. The tungsten tip of the catheter was removed from the mesocolon, achieving a decompression of the obstructed bowel. In order to strengthen the self-locating catheter, we used non-absorbable suture fixing it at the anterior peritoneum of the pelvis.

Results: The patient recovered well postoperatively, tolerating oral intake 24 h later. He was discharged on the third postoperative day. The catheter remains functional after three-month follow-up.

Conclusions: We found no references to large bowel obstruction caused by peritoneal dialysis catheter until the date, as well as the laparoscopic approach for catheter reposition. The 'shape-memory' of the catheter favors dislocation of the tip because of its lightness. However, the weight added to the tip of the self-locating catheters to straighten it can be dangerous if a displacement takes place. This case illustrates the first mechanical large bowel obstruction relieved by catheter reposition. Minimally invasive techniques, such laparoscopic approach, should be considered more frequently for themanagement of bowel obstruction, since it can be used safely and result in faster recovery.

V050 - Video - Emergency Surgery

Laparoscopic Cholecystectomy in Patient with Destructive Cholecystitis Complicated by Bile Peritonitis

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Acute cholecystitis is the second source (13,4%) of intra-abdominal infection in Europe. Laparoscopic cholecystectomy has become a popular alternative to open cholecystectomy in the treatment of acute cholecystitis. Laparoscopic cholecystectomy is now considered the gold standard of therapy for symptomatic cholelithiasis and chronic cholecystitis. However no definitive data on its use in acute cholecystitis has been published. CIAO and CIAOW studies demonstrated 48.7% of acute cholecystitis were still operated with the open technique. In the present report, we describe a case of acute destructive calculous cholecystitis complicated with biliary peritonitis. 42-year-old woman admitted to our hospital with severe right upper quadrant abdominal pain and 2 days history of fever. Signs of peritonitis were found upon examination. The patient underwent surgery, and a diagnosis of acute destructive perforated cholecystitis with biliary peritonitis was made intra-operatively. There were problems with the release of the gallbladder due to local inflammation during surgery. There was a wide cystic duct and intraoperative cholangiography was made. There were no signs of choledocholithiasis during cholangiography. A cholecystectomy was successfully perfomed. There were no complications after surgery. The patient was discharged from hospital after 4 days.

V051 - Video - Emergency Surgery

Paraduodenal Hernia as a Rare Presentation of Acute Intestinal Oclusion: Laparoscopic Management

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Aims: Remark the importance of right paraduodenal hernia (RPDH) as a cause of acute abdominal pain and the feasibility of its reparation by laparoscopical approach. Paraduodenal hernias are a rare anomaly produced by an embryogenic error in the rotation of the midgut. In the RPDH, there is an incomplete 180° counterclockwise rotation of the prearterial jejunum. Although their low incidence, they cause of 50% of internal hernias, and 50% of them will present intestinal occlusion. In RPDH, the visceral content herniates into the fossa of Waldeyer and is more frequent in males (3:1) between the fourth and the sixth decade.

Methods: Single case report of reduction of right paraduodenal hernia by laparoscopic approach.

Results: We present a case of a 39 years old woman with not known comorbidities that presented abdominal pain associated with nausea without vomiting over 7 days. She explained no change on her depositional habit and no other abdominal symptom. There was no history of abdominal surgery or trauma to the abdomen. On physical examination she has normal pulse, and blood pressure. She presented a moderate-obese abdomen, middle-distended, not tender. There was no tympanism nor peritoneal irritation but intense pain in right hemiabdomen. Blood samples revealed acute reactants elevation (PCR), leukocytosis with neutrophylia and incipient coagulopaty. Radiologic findings described sparse intraperitoneal free fluid. Due to the persistent pain, exploratory laparoscopy was indicated. Under general anesthesia, Hasson umbilical trocar was placed and pneumoperitoneum was done. Intraoperatively a huge amount of free fluid was found and a RPDH was diagnosed as part of the small bowel was covered by the transverse mesocolon amb located in the right side of the superior mesenteric artery. Hernial content was reduced without requiring intestinal resection and hernia orifice was slightly widened. Recovery was uneventful and patient was discharged on 3rd postoperative day. After 6 months the patient remains asymptomatic.

Conclusions: RPDH reduction and reparation is feasible by laparoscopic approach. Clinical presentation of RPDH incarceration can be unspecific requiring laparoscopic exploration to find such aetiology. As complications of undetected and untreated RPDH are severe its diagnosis should be considered in unspecific abdominal pain.

V052 - Video - Emergency Surgery

Heart Wound, Resolution of a Positive Pericardial Window Case by Minimally Invasive Surgery

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Introduction: A 28-year-old patient with a precordial socket in 3 left intercostal space with a middle clavicular lien, a 200 cc left hemotorax at the passage of the thorax tube, and at 2 days was taken to the pericardial window by left videothoracoscopy, finding pericardium wound drained to the chest, When performing pericardiotomy is evidence of right ventricle wound with layered bleeding, cardiorraphy is performed by minimally invasive surgery. Patient with satisfactory evolution is egressed on day 5, with normal echocardiogram, control at 6 months without abnormalities.

Aims: Video of minimally invasive management of a right ventricle wound in a stable patient will be reviewed, the surgical technique, literature review.

Results: The minimally invasive surgery in trauma is an additional strategy for the management of patients with stable penetrating trauma, the precordial trauma is one of the trumatic pathologies that can be held by this technology with safety in a trauma team.

Conclusions: Minimally invasive surgery has been gaining ground in trauma, penetrating precordial trauma is within the options according to the patient's appropriate selection, hemodynamic stability and environment.

V053 - Video - Endocrine Surgery

Indocyanine Green Fluorescence Imaging for Preserving Parathyroid Glands and its Function in Transoral Endoscopic Thyroidectomy Vestibular Approach

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Background: The standard treatment of multinodular goiter is total thyroidectomy. Nevertheless, the advanced of endoscopic surgery technology have supported an opportunity for patients to undergo minimally invasive surgery. After we developed a transoral endoscopic thyroidectomy vestibular approach (TOETVA) as an alternative choice of natural orifice surgery (NOS) for thyroid surgery. We applied the advantage of near-infrared (NIR) laparoscopic image and indocyanine green (ICG) angiography to help identifying and preserving parathyroid glands during total thyroidectomy with TOETVA technique in order to avoid postoperative hypocalcemia.

Methods: One case of multinodular goiter in female patient aged 52 years old was selected. ICG angiography with NIR laparoscopic PINPOINT camera (Novadaq, Ontario, Canada) was performed to identify and preserve parathyroid glands before total thyroidectomy with TOETVA technique. Serum calcium and parathyroid hormone were observed before and after the operation.

Results: The operative time was 100 min with estimated blood loss of 40 mL. The serum calcium preoperative, postoperative day 0, and postoperative day 7 were 10.1, 9.5, and 10.2 mg/dL respectively. The serum parathyroid hormone preoperative, postoperative day 0, and postoperative day 7 were 43.3, 39.2, and 45.6 pg/mL respectively. There is no immediate complications such as hypocalcemia or hoarseness.

Conclusion: NIR fluorescent imaging with intraoperative parathyroid gland ICG angiography is feasible and safe to help identifying and preserving parathyroid glands during total thyroidectomy with TOETVA technique and no postoperative hypocalcemia with good cosmetic result.

V054 - Video - Endocrine Surgery

Minimally Invasive Videoi-Assisted Parathyroidectomy with Intraoperative Nerve Stimulation

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Introduction: Intraoperative nerve stimulation and neuromonitoring is a commonly accepted practice during endocrine surgical procedures in the neck.

Minimally invasive thyroidectomy and parathyroidectomy and especially video-assisted parathyroidectomy are safely and successfully performed in selected patients with appropriate indications.

Material/Method: We present a video demonstrating our technique in a case of a Minimally Invasive Video-Assisted Parathyroidectomy (MIVAP), with intraoperative recurrent laryngeal nerve stimulation.

We demonstrate the necessity of modification of the ordinary technique in order to get a positive identification of the nerve.

Conclusion: A modification of the standard technique of intraoperative nerve stimulation is mandatory during MIVAP.

V055 - Video - Endocrine Surgery

Paraganglioma of the Left Renal Hilum, Anatomy and Technical Details for Laparoscopic Resection

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The patient is a 24-year-old man with a history of petit mal epilepsy and high colesterol. He presented an acute episode of hypertension with systolic BP of up to 230 and a diastolic of 140, courted by palpitations and headache.

Urine Catecolamines from a 24h Sample showed Noradrenalin of 398 (normal 86) with total Catecolamines of 471 (normal 109). Other results confirmed increased catecolamine metabolite levels. Blood pressure was finally controled with Doxayosine, bisoprolol, lercampin and enalapril.

A computer tomogram showed a tumor of 4 cm in diameter in the left renal hilum, exactly between the renal vein and artery and displacing them. A gamagram showed pathologic uptake of the tracer only in this zone.

A laparoscopic resection was planned.

The procedure was made under general anesthesia with central venous and arterial lines for continuous monitoring. The patient was placed in right lateral decubitus with adequate support.

The initial approach was a direct optic guided pneumoperitoneum with left subcostal placement of the working ports. After pneumoperitoneum was gained, the optic was changed to a 30˚ 10 mm one. The access to the left retroperitoneum was initiated cefalad, with displacement of the Spleen, pancreas tail and stomach. The caudal access was completed with extensive liberation of the descending colon. Special anatomical landmarks are noted.

Once the renal vein and artery are identified the tumor is meticulously dissected using different tools.

The postoperative recovery was uneventful with 24 h stay in the ICU.

Discussion: Paragangliomas represent only 10% of catecolamine producing tumours. They are usually located in the abdomen in relation to the sympathic chain. Their habitual clinical presentation is as described in this patient. Pheocromocitomas are readily resected laparoscopicaly since the technique does not differ from the adrenalectomy. In the case of paragangliomas, their location closer to the midline and large vessels means that sometimes an open approach is preferred.

A complete exposure of the surgical field during laparoscopy before the actual resection is begun is important in case of urgent conversion. We report on the successful resection of a left renal hilar paragangliom with complete preservation of the displaced renal vessels.

V056 - Video - Endocrine Surgery

Bilateral Laparoscopic Transperitoneal Adrenalectomy in a Patient with Carney Syndrome

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Aims: We present a technique for bilateral laparoscopic adrenalectomy in a 66-year-old woman suffering from cortisole hypersecretion due to Carney syndrome. This rare syndrome (complex), is inherited in an autosomal dominant pattern and is comprised of hyperpigmentation of the skin, myocardial myxoma and endocrine over activity (most often with cortisol hypersecretion), due to pigmented nodular adrenal gland hyperplasia. Our patient was subsequently diagnosed with a mutation in the PRKAR1A gene of the 17q23-q24 chromosome.

Methods: The patient underwent bilateral laparoscopic adrenalectomy using a transperitoneal approach with the patient placed in lateral decubitus position. Initially the left adrenal gland was removed after complete mobilisation of the pancreatico-splenic complex and selective ligation of the main suprarenal vein and the rest of the vascular branches. Then the patient was re-positioned and the right adrenalectomy was performed after similar selective ligation of the vascular supply to the gland.

Results: Total operative time was 5 h. Postoperative period was uneventful without any complications and the patient was discharged on postoperative day 4.

Conclusions: Detailed knowledge of the anatomy, selective vascular control of the adrenal glands and co-operation and communication between the surgical and anaesthetic team including the rest of the OR staff are imperative for performing simultaneous bilateral adrenelectomies safely and for saving operative time.

V057 - Video - Endocrine Surgery

Transaxillary Endoscopic Thyroidectomy Using A Modified 4 PORT Technique: How I Do It

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Aims: In the modern era of minimally invasive surgery, several approaches to surgically excise the thyroid gland have been described leaving no neck scars. We demonstrate our technique of transaxillary purely endoscpic hemithyroidectomy using an additional 5 mm port in the axilla to facilitate retraction and dissection of large goitres.

Methods: The traditionally described purely endoscopic transaxillary hemithyroidectomy uses two 5 mm ports at the shoulder and breast to triangulate with the 10 mm camera port in the axillary fold. This technique is suitable for smaller thyroid glands but becomes technically challenging when dealing with larger goitres due to lack of retraction of the sternomastoid muscles and thyroid gland. Case reports of using an additional 5 mm port from the opposite breast to help with the dissection have been described in the literature. We demonstrate our port placement of an additional 5 mm working port in the same axilla that becomes very useful in delaing with larger thyroid nodules and allows the surgeon an extra working port to facilitate safe dissection and resection of the thyroid gland without compromising on the cosmesis.

Results: The introduction of an extra 5 mm working port on the same side in the axilla inferior to the camera port allows the surgeon better visualisation of the surgical field by lateral and inferior retraction of the sternomastoid muscle by the assistant and also helps with retraction of the thyroid gland as it is divided from its laryngeal attachments. The cosmesis is excellent as the scar is hidden in the axilla and it does not require added dissection of the skin flap on the opposite side to insert an additional working port.

Conclusion: This modified 4-port technique of transaxillary endoscopic thyroidecotmy for larger goitres is an useful operation that can reduce the need for conversion due to technical difficultyand maintains the cosmetic benefits of this operation.

V058 - Video - Endocrine Surgery

Trans-axillary Endoscopic Parathyroidectomy

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Introduction: Endoscopic techniques are uprising in the cervical field mainly because of the exceptional cosmetic results. These surgeries are so frequent in the far east Asia but still rare in Europe.

Aims: To present a didactic video of a transaxillary approach to a parathyroid adenoma.

Material and Methods: A 61 year-old lady with hypercalcemia came to the office. Her exams included radionuclide scintigraphy, ultrasound and CT scan. A 10 mm parathyroid adenoma was identified in the lower pole of the left thyroid lobe.

Ultrasound precise location was performed just before surgery. Intra-operative PTH monitoring and laryngeal recurrent nerve monitoring were available.

Three trocars were used, 2 trans-axillary and one on the nipple border. Dissection was done to reach the anterior triangle of the neck, followed by thyroid lobe avulsion. Identification of the parathyroid adenoma was the next step, and then enucleation and extraction with an endobag.

Result: There were no intra-operative complications. Serum PTH dropped more than 50% after adenoma resection (from 234 pg/ml to 33 pg/ml). Total time was 45 min. Final cosmetic result was great.

Conclusion: These techniques provide excellent intra-operative view and scar less result. Pre-operative precise location is indispensable since contra-lateral surgical exploration is not possible with this approach.

V059 - Video - Endocrine Surgery

Technical Considerations in Transabdominal Adrenalectomy for Pheochromocytoma

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Aims: Laparoscopic adrenalectomy is the mainstay of treatment for benign adrenal tumors. Pheochromocytoma excision is confounded by potential hemodynamic instability and an increased risk of intraoperative bleeding. A perceived increased risk of malignancy renders laparoscopic surgery even more challenging. In this video we present intraoperative strategies for laparoscopic management of sporadic and familial pheochromocytomas.

Material and Methods: Video material was selected amongst archival data from 55 laparoscopic adrenalectomies for pheochromocytoma between June 1997 and December 2016. Material from three procedures was selected. These procedures were: right adrenalectomy for sporadic pheochromocytoma in a 34 year old female, bilateral-adrenal sparring adrenalectomy in MEN IIA syndrome in a 32 year old female and excision of a large intrabdominal paraggaglioma (8.4 cm in diameter) in a 54 year old female.

Results: The first patient underwent uneventful transabdominal right adrenalectomy for sporadic pheochromocytoma. The second patient underwent left adrenalectomy and cortical sparring right adrenalectomy. Late adrenal vein ligation was chosen in both cases. The third patient underwent laparoscopic excision of large paragagglioma in the left retroperitoneal space. Approach was similar as left adrenalectomy. A sustained hypertensive crisis resulted in administration of intravenous sodium nitroprusside. All three procedures were completed successfully. All patients were discharged on the second postoperative day.

Conclusions: Laparoscopic resection of pheochromocytomas, despite its greater difficulty compared to that of other adrenal tumors, is a safe and effective procedure, beneficial for the patient in the hands of experienced surgical teams.

V060 - Video - Endocrine Surgery

Focused Minimally Invasive Video-Assisted Parathyroidectomy: How I Do It

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Aim: The role of focused parathyroidectomy is well established in literature for treating primary hyperparathyoridism from single gland disease localised on imaging. The use of intra-operative PTH-assay is a useful adjunct to ensure successful surgery. We present an operative video showing our technique of Focused Minimally Invasive Video-Assisted Parathyroidectomy (MIVAP).

Methods: A 52-year old chinese male with recurrent renal calculi had biochemically confirmed primary hyperparathyroidism (PHPTH). SestaMIBI scan and surgeon performed Ultrasound Neck confirmed presence of a left lower parathyroid adenoma. He underwent a Focused MIVAP procedure. We present a teaching video showing the operative steps of this procedure.

Results: The lesion was marked prior to operation using surgeon performed ultrasound to plan location of incision. The parathyroid adenoma was identified and carefully dissected free from adjacent thyroid capsule, taking care to avoid injury to the left recurrent laryngeal nerve. The pre-operative baseline i-PTH value was 24.2pmol\L and the 15-minute post excision value was 7.4 pmol\L (normal: 1.6–6.9 pmol/L; % drop=69.4%). The patient made an unevenful recovery and was discharged the next day. At 6 months follow-up, he remained normocalcemic.

Conclusion: The MIVAP approach provides clear magnified view of the anatomy to allow safe and easy dissection of the pre-operatively localised parathyroid adenoma. It is an easy technique to learn by surgeons already familiar with laparoscopic surgery.

V061 - Video - Endocrine Surgery

Indocyanine Green Fluorescence-Guided Laparoscopic Adrenalectomy

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Aims: The laparoscopic approach has become the "Gold Standard" technique for both partial and total excision of the adrenal glands. Visualization of the margins and their differentiation from the surrounding fatty tissue can sometimes be difficult, especially in obese patients. The identification of the vascularization of the adrenal glands is the most important maneuver during this surgery and the early vascular control allows to reduce the rate of reconversions to open surgery, with hemorrhage being the main cause.

Fluorescence with indocyanine green allows both determining the limits of the adrenal gland and identifying its vascularization in laparoscopic adrenalectomy.

Methods: We present the case of a 66-year-old male patient derived from a first level hospital due to a radiological finding in a CT scan of a left adrenal tumor of 4.7 cm, suggestive of adrenal adenoma. The preoperative hormonal analysis does not show alterations.

With diagnostic orientation of normofunctioning adrenal adenoma, we performed left laparoscopic adrenalectomy assisted by indocyanine green (ICG) fluorescence.

Results: The increased uptake of ICG by the adrenal gland makes it possible to differentiate it perfectly from the surrounding fatty tissue, thus ensuring complete resection. The visualization of the glandular vascularization with ICG contributes a greater control of this during the adrenalectomy.

The patient has no postoperative complications and is discharged from the hospital on the second postoperative day.

The result of the anatomopathological analysis reports that it is a cortical adenoma without dysplasia.

Conclusions: Fluorescence with indocyanine green in laparoscopic adrenalectomy provides a better visualization of the margins and vascularization of the adrenal gland.

V062 - Video - Endocrine Surgery

Case Report: Laparoscopic Partial Adrenalectomy for Primary Aldosteronism an Initial Experience

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Background: Primary Aldosteronism due to small adrenal lesions had been traditionally treated with Laparoscopic Adrenalectomy and had since been the gold standard intervention. Recently, there has been increasing reports of adrenal sparing surgeries not just for bilateral tumors but also for solitary aldosterone producing adenomas.

Objective: To present a case of a 45 year old female with a solitary adrenal adenoma who underwent laparoscopic partial adrenalectomy, left. Our institution's first experience and how we did it.

Clinical Case: A 45 year old female who initially presented with elevated blood pressure and weakness of lower extremities. Work-up was done and was diagnosed to have Primary Aldosteronism secondary to a left adrenal adenoma. An increased plasma aldosterone, decreased renin activity, elevated Aldosterone/Renin Ratio and CT scan of the abdomen showed a 1.1×1.2 cm single well circumscribed adrenal adenoma located at the supero-lateral ascpect of the left adrenal gland confirmed the diagnosis. A laparoscopic surgical intervention was planned. The patient underwent Laparoscopic Partial Adrenalectomy, Left using the lateral transabdominal approach. The patient tolerated the procedure well with resolution of symptoms and was discharged on the postoperative day 2.

Conclusion: Current literature demonstrates that Laparoscopic partial adrenalectomy is efficacious and safe. This is a case report of our institution's first experience and it shows that laparoscopic partial adrenalectomy is feasible option for select patients with aldosterone producing adenoma.

V063 - Video - Endocrine Surgery

Laparoscopic Resection of Adrenal CYST

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Aims: Patients with adrenal cyst are about 8% of all patients treated for adrenal pathologies. Symptoms typically include abdominal pain and sometimes palpable mass in the abdomen. We present laparoscopic treatment for patients with adrenal cysts.

Methods: Malignancy and parasitic etiology of cysts first were rule out in all patients (we performed ELISA test for echinococcosis). Patients were operated on with intention of resecting the cyst and preservation of adrenal glands. In the video we present a case of 32 years old female patient with the cyst of left adrenal gland who was treated laparoscopically. The diameter of the cyst was 12 cm.

We used lateral transperitoneal approach. Four 10 mm trocars were used. After preparation of intraperitoneal adhesions the cyst was carefully exposed. Adrenal cyst was resected within the margins of healthy adrenal tissue. During the procedure the operating team was trying to avoid ligating the adrenal vein. The cyst was evacuated using endobag.

Results: There was no intraoperative or postoperative complications. Healthy adrenal tissue was preserved. In the CT scan six years after the surgery normal adrenal gland was present with no recurrence of adrenal cyst.

Conclucions: In our opinion laparoscopic surgery is safe and effective treatment of adrenal cysts. It allows to resect the cyst alone and preserve the adrenal gland.

V064 - Video - Endocrine Surgery

Laparoscopic Transperitoneal Adrenalectomy for Left Adrenal Adenoma

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Aims: Laparoscopic adrenalectomy has become the standard of care for most adrenal masses. We report a case of laparoscopic adrenalectomy for left adrenal adenoma.

Methods: We present the case of a 72-year-old Caucasian female patient with an asymptomatic, left-sided adenoma, that was incidentally detected during abdominal ultrasound. No headaches, palpitations, tachycardia, tremor, dizziness or vomiting were reported. Pre-operative blood tests confirmed that the tumor was a non-secreting one and a CT-scan revealed a 2,9×2,2 cm left adrenal mass. Laparoscopic surgical excision was proposed. The patient was placed in semi-lateral right-sided decubitus position. Four trocars (1 epigastric – 10 mm & 3 subcostals – 10 mm & 2 5 mm) were used, without the use of a liver retractor. The adrenal vessels were clipped not only with the standard laparoscopic clips, but also with the Hem-o-Lok ligation system.

Results: The operation lasted for $2^{1/2}$ hours with minimal blood loss. The patient's post-operative course was uneventful and she was finally discharged four days post-operatively. Histology report ensured that it was adenoma of the adrenal cortex.

Conclusions: The laparoscopic approach is considered to be the new "gold standard" for adrenal surgical resection. This well-established procedure offers many advantages compared to the traditional open approach, such as; less hemorrhage, shorter hospital stay, faster functional recovery and fewer complications.

V065 - Video - Endocrine Surgery

Retrosternal Goitre Grade 1 - Trans-axillary Endoscopic Total Thyroidectomy with RLN Neuromonitoring and Parathyroid ICG Vascular Assessment

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Introduction: Trans-axillary surgery is an emerging technique for cervical approach with fantastic cosmetic result. With more than 50 cases treated by our group, indications can be enlarged and more advance cases can benefit from this approach. Neuromonitoring of the recurrent laryngeal nerve (RLN) and indocyanine green (ICG) fluorescence for parathyroid vascular assessment are new tools for the trans-axillary thyroidectomy that can aid for safe surgery.
Aims: To present a video of a bilateral trans-axillary approach for the treatment of a multinodular goitre with a retrosternal component.
Material and Methods: A 42-year-old high school teacher was referenced to our department with a retrosternal multinodular goitre. She had a normal thyroid function and a benign fine-needle aspiration cytology. Her CT scan revealed a retrosternal goitre grade 1 with a 40 cc left thyroid lobe.
It was used a bilateral trans-axillary endoscopic approach. The NIR/ICG system from Karl Storz was used for fluorescence imaging and the NIM-response 3.0 monitor with the NIM FLEX EMG endotracheal tube and a 30 cm large probe, all from Medtronic, for the RLN neuromonitoring.
Result: RLN monitoring was succeed with normal response bilaterally. Two superior parathyroid were clearly identified and ICG fluorescence revealed excellent vascular uptake in one of them.
Laryngoscopy during extubation showed good mobility and symmetry of the vocal cords. The day after surgery, serum PTH and ionized calcium were within normal values. The patient was discharged home on PO day 2.
Final cosmetic result was very good and the patient was very satisfied.
Conclusion: There is a large experience with great results in endoscopic scar-less techniques for thyroidectomy in the far east Asia. Well selected cases of retrosternal goitre can also be candidates to this kind of approach. New tools can increase safety in the same way as in cervicotomy surgery.

V066 - Video - Endocrine Surgery

Development of Low-Cost Video-Assisted Thyroid Surgery by Single Surgeon with Disposable Energy Device

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Aim: Since April 2016, Japanese public health care started to cover video-assisted thyroid surgery. However, it is still not so popular until now instead of its excellence in cosmetic outcome and low invasiveness. We used to demonstrate VANS method that is video-assisted thyroid surgery by subclavicular approach with costly disposable harmonic scalpel, then this time we developed VANS method demonstrated by single surgeon without any assistant called "VANS-3S method" with reusable energy device; BiClamp110. VANS-3S method requires the Mist-less retractor especially designed for VANS method, SCM-retractor and Nitrogen gas powered locking arm for endoscope, and these instruments enable only single surgeon to complete video-assisted thyroidectomy successfully. BicCamp110 is a radiofrequency device originally designed for MIVAT method and we proved it is also suitable for VANS method because of their fine jaw, speedy sealing and cutting tissues and durability. Then we could cut personnel expense for three assistants and held down power device cost to a one-thirteenth. Here I present a video of VANS-3S method with BiClamp110 in detail.
Method: We demonstrated statistic analyses comparing thirty patient treated with VANS-HS with those with VANS-3SBC in many parameters for example, intraoperative bleeding, operation time, postoperative drainage, postoperative complication and hospitalization.
Result: Intraoperative bleeding and postoperative drainage of VANS-3SBC are significantly less than those of VANS-HS statistically. There are no significant differences between VANS-HS and VANS-3SBC in other parameters.
Conclusion: We successfully introduced and developed low-cost video-assisted thyroid surgery by single surgeon with disposable energy device. If our action contributes to the spread of low-cost video-assisted thyroid surgery to the world, it's happy.

V067 - Video - Flexible Surgery

Intial Experience Transanal Pelvic Exenteration for Pelvic Malignancies

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Aims: Due to the recent development of instruments and technique advanced laparoscopic surgery could be possible including laparoscopic total pelvic exenteration (Lap-TPE). However, Lap-TPE is sometimes a task of extreme difficulty. It is when we cannot insert my hand to the retro-rectal space. Such situation appears in the case with huge pelvic tumor. Another is when we are required to perform LN dissection along the internal iliac vessels. Transanal approach, followed by abdominal approach might overcome this difficulty. Transanal approach allows us to access to the narrow and deep pelvis easily. In this approach, we can look deepest pelvis and pelvic side wall directly in front of the anal. In this favorable vison, the most difficult manipulation in the deep pelvis becomes safe and easy.

Methods: Between October 2016 and December 2016, 2 male and 3 female patients underwent transanal TPE (Ta-TPE) at Nagoya University Hospital. We report the safety and actual surgical technique of this initial experience. Surgical technique: We started transanal endoscopic approach first. The GelPOINT path® was inserted. The beginning approach is same as the Ta-TME. First, posterior rectal dissection was performed as much as possible. After that, the lateral dissection was performed along the levator muscle and the bottom and lateral wall of the obturator space was opened bilaterally. Then, the partition which consisted of the pelvic autonomic nerve plexus and internal iliac vessels was appeared. The pelvic plexus and the inner branches of the internal iliac vessels were carefully divided along the trunk of the internal iliac vessels. The bilateral ureters were confirmed. Laterally, the bilateral obturator nerve and the external iliac vein could be visualized. Then, abdominal open or laparoscopic approach was started. It is extremely easy to connect to the retroperitoneal dissection plain. The anterior dissection was performed by abdominal manipulation.

Results: Ta-TPE was performed for advanced rectal cancer (n=2), gynecological recurrent disease (n=2), and huge rectal submucosal tumor (n=1). Pathological R0 resection was achieved in all cases. All patients were discharged without major complications.

Conclusion: This novel Ta-TPE was safe and acceptable procedure for carefully selected patients with pelvic malignancies.

V068 - Video - Flexible Surgery

Endoscopic Sleeve Gastroplasty (ESG) in a Case of Situs Inversus Viscerum

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Aims: Here we show and endoscopic sleeve gastrectomy procedure in a morbidly obese patient (BMI 53.9 Kg/m^2) diagnosed with a situs inversus, after a failed attempt to perform a laparoscopic sleeve.

Methods: To better understand the anatomy and to check for additional anatomical variation, a 3D reconstruction was obtained from the CT-scan showing a total transposition of abdominal organs including the liver, the stomach, and the great vessels. After a failed attempt to perform a standard laparoscopic sleeve gastrectomy due to the inverted position of the stomach and the fact that the gastroesophageal junction was out of surgical reach, embedded in the right liver lobe, the patient was scheduled for an endoscopic sleeve gastrectomy. The patient was placed in a supine position under general anesthesia. An initial endoscopy under CO^2 insufflation was performed to rule out any esophageal or gastric disease. After the introduction of an overtube, the Over-Stitch™ endoscopic suturing system (Apollo Endosurgery) was mounted onto the tip of a double channel endoscope (Olympus). 2/0 monofilament polypropylene sutures were loaded on the system. Six continuous full-thickness stitches were applied starting at the incisura angularis in a triangular pattern, first grabbing the anterior gastric wall, and then the greater curvature, and finally the posterior wall. The suture was then tightened and secured by using a cinching device. Four plications were performed until the gastric fundus was reached.A final control was made to check for the final tubular shape of the gastric cavity and for any bleeding.

Results: On postoperative day one, an upper GI series clearly showed a gastric "shortening" effect of the plication as well as the restricted lumen.

Conclusions: Endoscopic Sleeve gastroplasty proved to be safe and effective in this complex clinical scenario. At a 1-month follow-up, the patient is doing well and lost 16 Kg reaching a BMI of 49.8 Kg/m^2.

V069 - Video - Flexible Surgery

Endoscopic Treatment of Anastomosis Leak After Low Anterior Rectal Resection for Cancer

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Aims: This video shows our experience in colorectal fistula treatment after low anterior rectal resection for cancer.

Methods: A 69 years old female patient who underwent to neoadjuvant radio-chemotherapy and subsequent anterior rectal resection with defunctioning loop ileostomy for rectal adenocarcinoma (ypT3 pN0/12 G2) discovered an anastomotic leak 3 weeks after surgery during water-soluble contrast enema. The patient underwent to colonoscopy that confirmed the anastomotic leak of 7 mm.

Results: The patient underwent to operative colonoscopy in order to treat the colo-rectal anastomotic leak using 14/6 t 11 mm over-the-scope (Ovesco) clips.

Conclusion: The water-soluble contrast enema six days after this endoscopic procedure demonstrated no contrast spillage from the anastomosis. After completing adjuvant therapy, five month since endoscopic procedure, she underwent to ileostomy closure without post-operative complications.

V070 - Gastroduodenal Diseases

Laparoscopic Surgery of Gastric Cancer: Total Gastrectomy. Indications, Technique and Results After More than 30 Consecutive Cases

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Aims: Laparoscopic surgery of gastric cancer, now routinely performed in distal gastric cancer, is currently extended to treat of AGC even in the case of total gastrectomy, with encouraging results. The purpose of this study is to evaluate the efficacy, safety, and the results in terms of post-operative and follow-up complications in patients undergoing total laparoscopic gastrectomy.

Methods: From 2008 to 2016, after more than 150 surgical procedures for gastric cancer performed with minimally invasive approach, we performed 35 laparoscopic total gastrectomy (LTG), both for EGC and for AGC. We always made a D2 lymphadenectomy or higher, and omentum-preserving.

Results: The study population of 35 patients was composed of 22 men and 13 women (age: 6.76±10.20 years). The average time of surgery was equal to 156±45 min (range 90–280). The average number of lymph nodes removed was equal to 20.50±8.24 (range 16–40). We proceeded to partial omentectomy (omentum-preserving) in 25/35 cases (71.43%). We recorded 5/35 conversions (14.29%). We have a rate of intraoperative complications and positive resection margins at 0%. The average postoperative hospital stay was equal to 12.13±4.05 days (range 9–30). We recorded a regular postoperative course in 30/35 patients (85.71%). Post-operative surgical complications in 1/35 cases (2.86%). The mean follow-up time was 51.25± 35.26 months (range 1.41 to 105.50 months), and is still ongoing, so the data presented are preliminary. The partial follow-up to 36 months, with 18 patients, records survival rate equal to 61.11%. We recorded 5/18 (27.78%) deaths and a recurrence rate equal to 3/18 (16.67%).

Conclusion: Laparoscopic total gastrectomy with D2 lymphadenectomy and omentum-preserving is safe and feasible treatment of gastric cancer, both for EGC and for AGC. To establish this technique as a standard treatment for gastric cancer, further studies are necessary.

V071 - Video - Gastroduodenal Diseases

D2 Gastrectomy in Gastric Cancer

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Aims: Gastric adenocarcinoma is an aggressive disease with frequent lymph node metastases for which lymphadenectomy results in a survival benefit. The extent of lymph node in patient with resectable non-metastatic primary carcinoma of the stomach is still a controversial matter of a debate, with special regard to its effect on survival.

Methods: We would like to present a case of a 66 years old man, lymphoma no Hodking in 2011, diabetes-II for 8 years in treatment with metformin. The patient presented epigastric pain persisting for the last 10 months and loss weight. Upper endoscopy revealed an ulcer between body and gastric antrum and took a biopsy. The results of the biopsy was Adenocarcinoma. A contrast-enhanced computed tomography scan didn't identify adenopathies. The patient underwent an elective laparoscopic subtotal gastrectomy and lymphadenectomy D2. The evolution was fine and the patient came back home in the seven day after surgery.

The histopathologic features were intestinal-type gastric adenocarcinoma with affectation one of the twenty-three lymph nodes.

Conclusions: D2 lymphadenectomy can improve disease specific survival vs. D1. However, this advantage is mainly limited to survival benefit although the increased incidence of postoperative mortality reduces its therapeutic benefit.

The level of evidence is moderate, and the interaction with other factors affecting patient survival (such as complementary medical therapy) remains to be elucidated.

V072 - Video - Gastroduodenal Diseases

laparoscopic Resection of Cystic Duct Remnant

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Aim: Laparoscopic resection of cystic duct remnant.

Methods: Cystic duct remnant is a rare cause of post cholecystectomy syndrome and the Gold standard treatment is surgical resection due to high failure of endoscopic removal.

The video will show the steps used to successful laparoscopic resection without reverting to open surgery due to extensive adhesions noted in cystic duct remnant.

V073 - Video - Gastroduodenal Diseases

Laparoscopic Organ Preserving Surgery for Esophageal Submucosal Tumors

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Background: Surgical resection of submucosal tumors (SMTs) in the abdominal esophagus is not standardized. Enucleation may be a minimally invasive option, while its oncological validity is not very clear. Moreover, how to treat the esophageal wall defect after enucleation and necessity of additional anti-reflux procedure are also undetermined.

Methods: In 14 patients with a SMT originating the abdominal esophagus laparoscopic enucleation was performed with preserving the integrity of submucosa. When the muscular layer defect was less than 4 cm it was directly closed by suturing, while it was left open in case the defect was larger. Fundoplication was added when the esophagus was dissected posteriorly or the myotomy was not closed.

Results: Tumors were resected en-bloc without rupture in all cases. In 6 patients myotomy was closed, while in the remaining 8 it was left open. In 12 fundoplication was added (Toupet in 5 and Dor in 7). The patients developed neither regurgitation nor stenosis postoperatively. The histopathological findings revealed leiomyoma in 9, while the other 5 were miscellaneous. The average tumor size was 5.5 cm (range 2.8–8.8). Microscopically surgical margin was negative in all cases.

Conclusion: Laparoscopic enucleation of SMTs in the abdominal esophagus seems to be safe, reproducible operation enabling preservation of function of the lower esophagus and esophagogastric junction. Even when the muscular defect is not approximated additional fundoplication can minimize the risk of postoperative reflux disease.

V074 - Video - Gastroduodenal Diseases

Laparoscopic Endoscopic Cooperative Surgery for Gastric Cancer Using ICG Fluorescence-Guided Sentinel Node Biopsy

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Aim: The laparoscopic and endoscopic cooperative surgery (LECS) has been developed as a minimally partial resection for gastric submucosal tumor (GSMT). However, the original LECS is not applicable for lesions with tumor exposed on the mucosal surface due to oncological safety. To overcome the issue, we performed the closed-LECS, which doesn't require direct opening of the stomach wall during resection of the tumor even for early gastric cancer.

Method: Indication of closed-LECS is early gastric cancer, whose tumor size is within 4 cm in diameter. We routinely combine partial resection (closed LECS) of early gastric cancer with sentinel lymphatic basin dissection. The stomach are laparoscopically conducted and a local injection of 0.5 ml indocyanine green (ICG) 0.5% (5 mg/ml) is endoscopically performed. Under the laparoscopic view of ICG fluorescence, the sentinel lymph node (SN) is detected and the lymphatic basin (LB) including SN is dissected. Following removal of the whole SN, the LB is sent for the intraoperative pathology diagnosis. The closed-LECS is started when all examinations confirm negative SN. The procedure corresponds to the regular LECS; a mucosal incision is made to connect the dot marking. Marking is made endoscopically during laparoscopy using pyocyanine along the dissection line of the circumferential incision on the submucosal layer. A sponge material spacer that is adjusted to the size of the marking line is prepared, which is applied to the serosal surface of the tumor, and serosal muscular layer suture is evenly added until the sponge is completely buried. The oral endoscopic operation is resumed, and incision of the muscular layer/serosa of the bulging tumor is made. The resected specimen is collected orally with an endoscopic retrieval device. After carefully confirming the operation field both endoscopically and laparoscopically, the operation is ended.

Results: After 46 cases of LECS for GSMT, two cases for early gastric cancer underwent closed-LECS using ICG fluorescence-guided sentinel node biopsy. There was no intra- and post-operative complication.

Conclusion: The combination of the closed-LECS and the SNNS techniques, while applicable cases are limited, is expected to be established as the effective surgical procedure of partial gastrectomy for early gastric cancer.

V075 - Video - Gastroduodenal Diseases

Median Arcuate Ligament Syndrome: A Laparoscopic Approach

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Aims: Median arcuate ligament syndrome is a rare, exclusion diagnosis, characterised by the clinical triad of postpandrial abdominal pain, weight loss and vomiting. Different treatment options have been described, including transluminal dilation, surgical division of the median arcuate ligament and arterial bypass surgery. The aim of this video is to present a laparoscopic approach for the median arcuate ligament syndrome.
Methods: We present the case of a 23 year-old female complaining of postpandrial abdominal pain, 10 pounds weight loss and vomiting over a 6 month period. As part of her work-up endoscopy, colonoscopy and blood culture had been performed and were all within normal limits. CT angiogram showed a 60% stenosis of the proximal celiac artery secondary to the median arcuate ligament impression. Superior and inferior mesenteric arteries were widely patent. Given that her clinical symptoms and the radiological findings, a laparoscopic approach for the median arcuate ligament syndrome was offered to the patient who agreed to proceed.
Results: Laparoscopic approach through 5 trocars started by dividing the pars flaccida first. Both crura were dissected, oesophagus was mobilized and the abdominal aorta was exposed. The left gastric and hepatic artery dissection helped in identifying the celiac origin on the aorta. The entire fibro-fatty tissue on either side of the celiac origin was removed to bare the celiac origin completely. Once these maneuvers were completed, the celiac axis was clearly visualised without any residual kinking and uniform throughout its course. Operative time was 95 min with minimal blood loss. The patient recovered uneventfully on the post-operative and was able to be discharged the first day post-operative. No symptoms have been present on the 12 months follow-up.
Discussion: Median arcuate ligament syndrome is a rare entity which is diagnosed by exclusion.
Laparoscopy can be a safe and effective option on the treatment of this syndrome, reliving the symptoms with a minimally invasive approach.

V076 - Video - Gastroduodenal Diseases

Laparoscopic Repair of a Diaphragmatic Herniation After Laparoscopic Transhiatal Esophagectomy

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Aim: To assess the feasibility of the laparoscopic repair of a diaphragmatic hernia after a transhiatal esophagectomy (THE).
Methods: The presence of a diaphragmatic hernia behind is a rare complication. However, its incidence is not specifically reported. A 52 year old, man who underwent a laparoscopic THE for an squamous cell carcinoma with uneventful postoperative, came two months later to the emergency department referring to chest and epigastric pain. A CT scan showed a diaphragmatic hernia containing large bowel. Surgery was decided.
Results: The surgical approach was laparoscopic A large diaphragmatic defect was detected. Step 1: Reduction of large bowel into the abdominal cavity. Step 2: Closure of the hernia defect with silk suture. Step 3: Review surgical hemostasis. Step 4: Placement a transhiatal drain. The operative time was 100 min. No complications were observed during the surgical procedure.
Conclusions: The interest of this video is to show that a complication after THE like a diaphagmatic hernia could be repaired by laparoscopy.

V077 - Video - Gastroduodenal Diseases

Laparoscopic Repair Of Giant Mixt-Type Hiatal Hernia

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Aim: The repair of giant hiatal hernia is technically demanding and controversial. We present the case of a 76 years old complaining of epigastric pain, dysphagia and weight loss, with a large mixt-type hiatal hernia comprising more than 2/3 of the stomach, with volvulus, and multiple cardiovascular co-morbidities.
Methods: The standard five trocar technique was used. After the exposure of the hiatal pillars and the reduction of hernia by means of atraumatic grasper in a hand over hand fashion, a complete excision of sac was performed. For the primary closure of hiatal hernia defect simple interrupted sutures on pledgets were used. Following the approximation of crura a floppy Nissen fundoplication completed the procedure. There was no need for a mesh of for relaxation incision of the right crus.
Results: The duration of surgery was 150 min. The postoperative course was uneventful, and the patient was discharged in the 5th postoperative day. One month later the patient showed no relapse of digestive symptoms, upper GI series showed no recurrence and the patient regained weight.
Conclusions: The minimal invasive surgical approach for repair of large hiatal hernias is a difficult but safe method with long-term efficacy of symptom control and significant improvement in the quality of life.

V078 - Video - Gastroduodenal Diseases

Laparoscopic Techniques for Gastric Gastrointestinal Stromal Tumors

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Aim: Gastric gastrointestinal stromal tumors (GISTs) are rare neoplasms that require complete excision for cure. Minimally invasive surgery has been established as the treatment of choice. Variable laparoscopic techniques can be performed depending on the size and location of the gastric tumor.
Methods: The video shows different laparoscopic techniques like a simple wedge resection, a transgastric stapled resection and a gastric excision with closure of the stomache by running suture. The individual decision for each procedure and the main operative steps are presented.
Conclusion: Minimally invasive resection of gastric GISTs is a safe and efficient treatment. Special laparocopic and combined laparocopic/endoscopic techniques and an individual strategy are necessary to remove tumors of larger size or those in difficult position.

V079 - Video - Gastroduodenal Diseases

'Back to the Suture'. How Can we Make it as Easy as Possible to Perform Needle Driving and Knot-Tying During Laparoscopic GI Tract Surgery?

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Aims: Laparoscopic gastrointestinal surgery often requires the reconstruction of the GI tract. In laparoscopic surgery, it is believed that hand-sewn suturing using a needle and thread is difficult to carry out as a result of limitations in the access angle to the suture targets due to the use of fixed surgical ports. Using staplers is one solution, but when encountering difficult situations, hand-sewn suturing with a needle and thread is often safer than using staplers.We have so far performed hundreds of laproscopic hand-sewn anastomoses such as esophagojejunostomy, gastroduodenostomy, esophagogastrostomy, gastrogastrostomy, duodenojejunostomy for gastric malignancies and bariatric and metabolic surgeries without the occurrence of any anastomotic leakage.

Methods: There are various techniques for performing laparoscopic hand-sewn sutures, but we will herein share two of these important techniques to facilitate the performance of laparoscopic gastrointestinal anasotomosis based on our own experience.

Results: "The touch and go technique"; In laparoscopic surgery, there are two important angles between the suturing target and the surgical port in three dimensions. Namely, the "Azimuths angle", which is the angle in the horizontal direction and the "Depression angle", which is the angle in the vertical direction. Generally, the smaller these angles are the easier it is to drive and manipulate needles. In order to carry out needle driving in the proper direction, it is necessary to cancel these important angles in laparoscopic surgery. One solution is to hold the needle with a needle holder at an appropriate angle. Then we can sew the suture lines on the gut at almost all angles in an appropriate direction quickly with one action maneuver named "Touch and go needle drive". "*The intentional slip knot technique*"; Basically, this is a square knot using "over wrap" and "under wrap" techniques. First of all, we intentionally create a loose square knot and then convert it to a slip knot quickly without releasing the thread, and finally we can bring the gut wall together with the most appropriate strength without any loosening.

Conclusions: Using the "Touch and go technique" and the "Intentional slip knot technique" laparoscopic gastrointestinal anastomosis / sutures can be easily, quickly, and accurately performed.

V080 - Video - Gastroduodenal Diseases

Robotic-Assisted Partial Gastrectomy with Intracorporeal Billroth II Gastoenterostomy

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65 year old, male patient presented with upper abdominal discomfort and pain, without nausea, vomiting or weight loss.

An sub mucosal lesion was found on endoscopy examination in first part of the duodenum. Endoscopic ultrasound has showed 2.5 cm sub mucosal lesion in first part of duodenum (anterior wall and close to pylorus). Cytology examination from the lesion has showedneuroendocrine tumor.

Computed tomography of abdomen and chest were normal.

His blood laboratory examinations were within normal limits.

Patient underwent da Vinci robotic partial gastrectomy with intra corporealBillroth II gastrojejunostomy.

Total operating time (ORT) was 255 min. Three day after operation patient started regular diet and was discharged home on day fife.

Final pathology report confirmed diagnosis of Carcinoid tumor with Ki67 less than 1%.

V081 - Video - Gastroduodenal Diseases

Robotic-Assisted Partial Gastrectomy with Modified D2 Lymphadenectomy and Bilroth II Gastroenterostomy

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58 year old, male patient presented with upper abdominal pain, nausea, vomiting (on an of) and anemia, started two month before admission.

An ulcerative, obstructive lesion was found on endoscopy examination (close to the pylorus). Biopsy from the mass has showed poorly differentiated signet ring cell adenocarcinoma.

Chest computed tomography revealed 38 mm thoracic aortic aneurism. Abdominal computed tomography showed 43 mm infra renal aortic aneurism and no evidence of metastatic disease.

His blood laboratory examinations showed Hgb – 9.3. Serum CEA level was normal.

Patient underwent da Vinci robotic-assisted Partial Gastrectomy with modified D2 lymphadenectomy and Billroth II gastrojejunostomy.

Total operating time (ORT) was 222 min. Three day after operation patient started regular diet and was discharged home on day four.

Final pathology result confirmed poorly differentiatedadenocarcinoma with signet ring cells.

V082 - Video - Gastroduodenal Diseases

Robotic-Assisted Total Gastrectomy with Modified D2 Lymphadenectomy and ROUX-AN-Y Esophagojejunostomy

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67 year old, female patient presented with upper abdominal discomfort and pain, without nausea, vomiting or weight loss, started two month before admission.

An ulcerative lesion was found on gastroscopy examination (near theincisuraangularis). Biopsy from the mass has showedsignet ring cell adenocarcinoma, poorly differentiated, diffuse type.

Endoscopic ultrasound (EUS) didn't show lymphadenopathy. Chest and abdominal computed tomography were without any significant findings.

Her blood laboratory examinations were within normal limits including serum CEA.

Patient underwent da Vinci robotic-assisted Total Gastrectomywith modified D2 lymphadenectomy and Roux-en-Y esophagojejunostomy.

Total operating time (ORT) was 200 min. Three day after operation patient started regular diet and was discharged on day six after operation.

Final pathology result confirmed poorly differentiated adenocarcinoma with signet ring cells.

V083 - Video - Gastroduodenal Diseases

Fully Intracorporeal, Robotic Esophagojejunostomy After Total Gastrectomy

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Introduction: Laparoscopic gastrectomy for cancer has proved safe and efficient in the existing literature. Advance into robotic technology has not succeeded to prove a real benefit over existing laparoscopic techniques concerning operative and oncologic outcomes. However, this might be largely attributed to the great variety and differences among techniques of gastrectomy and surgeons' experience.
Aim: To present a fully intracorporeal robotic technique for esophagojejunostomy after gastrectomy.
Material: Our center has a large robotic experience (1522 procedures) from a great spectrum of general surgery indications including gastric procedures: 6 total gastrectomies, 20 distal gastrectomies, 1 proximal gastrectomy, 3 GI anastomoses, 8 wedge resections and 2 exploratory gastrotomies. During total gastrectomies, a fully intracorporeal technique has been fashioned for the gastrojejunal anastomoses using a circular stapler from the assistant port.
Results: Successfull outcomes of all procedures justified the choice of robotic technique in comparison to other approaches. Lymph node harvesting was greatly facilitated by the 3D image and the intuitive motion of the instruments. Benefits were most evident in the case of total gastrectomies, without need for intraoperative blood transfusion and short ICU stay (0–8 h). All patients were assessed by postoperative gastrographin swallow and discharged 4th–6th PO day.
Conclusions: Robotic surgery is an enabling technology facilitating fine dissection and high-quality visual field. A fully intracorporeal technique minimizes morbidity for the patient, but requires skills from the team. Our experience shows that robotic gastrectomy outcomes are strongly related to surgical team experience.

V084 - Video - Gastroduodenal Diseases

Laparoscopic D2 Gastrectomy for Gastric CA

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Aim: Presented are results of 26 Laparoscopic D2 Gastric resection that were all completed Laparoscopically at the American University of Beirut Medical Center and affiliated Hospitals.
Methods: All patients had adeno CA of the stomach; two of the patients are stage I, while the rest were stage II or III. The average LN retrieved is 38. No mortality and no complications were encountered except for 1 leak at the esophagojejunal anastomosis treated by drainage and 1 duodenal leak treated successfully.
Results: Patients were discharged between 7 and 9 days post-operative with minimal to mild post-operative discomfort. The technical details of Laparoscopic D2 Gastrectomy will be illustrated in this video presentation.
Conclusion: Unfortunately, Laparoscopic Gastrectomy cannot be considered yet a new surgical gold standard as of today. However, one may certainly state that Laparoscopic Gastrectomy for Gastric Cancer is a safe, reproducible technique oncological surgical principles applied when carried out by Laparoscopic experienced surgeons in appropriately selected patients.

V085 - Video - Gastroduodenal Diseases

New Apoproach for The Treatment of Sleeve Gastrectomy Leak with Laparoscopic Roux EN Y Bypass Distal to the Leak

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Aim: Leak is one of the common complication of laparoscopic sleeve gastrectomy that entail prolongation of hospital stay, morbidity and even mortality.
Methods: I report new approach for the treatment of 4 leaks presented to me post laparoscopic sleeve gastrectomy with laparoscopic Roux En Y bypass distal to the leak at the level of gastric angulasis with drainage of the leaks at the level gastroesophageal the commonest location of leaks. This shift the leak of sleeve from high pressure due to the pylorus to low pressure gastrojejunostomy using 60 mm Endo GIA blue cartilage. This new approach in comparison from the Roux En Y at the level of leaks at gastroesophageal is much easier and feasible and also reduced the prolonged hospital stay and avoid stenting due to high failure rate.
Results: All leaks healed with 4 weeks from surgery due to shift from high pressure pylorus to low pressure gastrojejunostomy.

V086 - Video - Gastroduodenal Diseases

Augmented Rectangle Technique (ART) for Intracoporeal Billroth-I Anastomosis in Totally Laparoscopic Distal Gastrectomy

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Background: Laparoscopy-assisted distal gastrectomy (LADG) with extracorporeal anastomosis has spread rapidly throughout Asian countries as minimally invasive treatment for gastric cancer. But, a standardized technique for intracorporeal anastomosis has not been established to perform totally laparoscopic distal gastrectomy (TLDG). Therefore, we have introduced an "augmented rectangle technique (ART)" as a new Billroth–I anastomosis after TLDG. The purpose of this report is to introduce the technical details of the ART and also evaluate the technical feasibility and safety of this method.
Methods: The ART reconstructed end-to-end gastroduodenostomy easily and formed a quadrilateral-shaped cross section of the anastomosis using 3 cartridges of endostapler. 170 patients underwent the TLDG reconstructed with the ART for the B-I anastomosis between Jan 2012 and Jan 2017.
Results: There were no surgical complications. No conversion to the open surgery was needed in all patients. In addition, neither anastomotic leakage nor stenosis was observed postoperatively.
Conclusions: The ART is considered a feasible and safe procedure of the reconstruction during the TLDG.

V087 - Video - Gastroduodenal Diseases

Laparoscopic Sleeve Gastrectomy for Neuroendocrine Gastric Tumor

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Aim: We want to highlight the feasibility of laparoscopic sleeve gastrectomy for a neuroendocrine tumor in an Enhanced Recovery After Surgery (ERAS) protocol.

Methods: A 59 years old man with hematemesis underwent an esophagogastroduodenoscopy (EGD). Preoperative exam showed a neoplastic lesion of the great curve of the stomach in a condition of multifocal gastric atrophy with biopsy positive for a neuroendocrine nature of the lesion. No secondary lesions nor lymphadenopathy were highlighted. In October 2016 the patient underwent surgery and a laparoscopic sleeve gastrectomy was performed.

Methods: Postoperative course was uneventful and the patient was discharged in postoperative day (PD) 3. Drinking started 8 h after the procedure and feeding began the day after surgery. Histological examination classified the lesion as a neuroendorine tumor, positive for Chromogranin and Synaptophysin receptors and negative for Gastrin receptors. According to TNM classification the mass resulted pT3 pN1 LV1, G2 R0. Proliferative index (Ki67) was 3%. According to Rhindi classification the lesion results as a GNETs type 1.

Conclusion(s): Surgery is still the unique curative method for neuroendocrine gastric lesions and should be considered the first choice approach for lesions with only a locoregional spread. The spectrum of possible resections include endoscopic resection, wedge resection, antrectomy and subtotal/total gastrectomy. A non-aggressive surgical management should be preferred due to the low mortality risk of this neoplasia. Rhindi classification and NCCN Guidelines should guide the selection of the correct management in this kind of pathology.

V088 - Video - Gastroduodenal Diseases

Solo Single Port Laparoscopic Omental Harvest for Immediate Breast Reconstruction

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Aims: Breast cancer surgery and accompanying reconstruction have been diversitified. We describe our technique of immediate breast reconstruction by using single port harvested omental flap (SHOF).

Methods: During a 12-month period, 26 immediate breast reconstruction with SHOF were performed. For SHOF, only one 2 ~ 2.5 cm transumbilical incision was used under lithotomy position. Solo single port total omentectomy was performed with ligation of left gastroepiploic vessels and arcade of gastroepiploic arcade was dissected from the stomach up to the distal antrum or intrapyloric vessels, and right gastroepiploic vessels was the main blood supplier for omental flap. Dissected omentum was carefully harvested on mastectomy site with no fixation suture through two finger's width subxyphoid tunneling.

Results: The mean BMI was 21.8±2.6. The mean total operation time and SHOF operation time were 204.9±29.7 and 56.3±8.7 min, respectively. There was no technical failure and adverse event in SHOF. The mean specimen weight was 169.9 ±48.9 g. Morbidity included 1 minor skin ischemia (3.8%) of the SHOF. There was no complication related to SHOF. Cosmetic results were mostly satisfactory, especially in the umbilical scar. The mean postoperative hospital stay was 8.2±4.4 (4 ~ 22) days.

Conclusion: In spite of a limit of case number, SHOF for immediate breast reconstruction is technically feasible and safe. The use of single port can maximize cosmetic result comparing with multiport laparoscopic omental harvest.

V089 - Video - Gastroduodenal Diseases

Laparoscopic Resection of a Large Gastric Duplication Cyst in an Adult

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Gastric duplication cysts are very uncommon with a reported incidence of 4–8% among all alimentary tract duplications. We report a case of a 40-year-old woman with a symptomatic large gastric duplication cyst, which was successfully treated by laparoscopic excision.

The patient presented with a 2-month history of epigastric pain, radiating to the back, gastric fullness and tendency to vomit. Ultrasound examination revealed a large hypoechoic cystic mass between the stomach and the spleen, while a abdominal MRI scan confirmed the presence of a well-defined, thin-walled, multispaced cyst, 10× 5×6 cm in size, in the left subdiaphragmatic area, adjacent to the gastric cardia and near the upper spleen pole. A subsequent gastroscopy showed no communication with the gastric lumen. The patient underwent an exploratory laparoscopy, using one 12-mm (for the 30-degree laparoscope), one 10/11-mm and two 5-mm trocars. Intraoperatively, we detected the upper part of the cystic wall exactly where the MRI scan suggested, attached to the gastric wall (the greater curvature of the cardia) and showing minimal non-dense adhesions to the spleen. The cyst was partially evacuated for better manipulation. After the full mobilization of the cyst, which had dense adherence to the gastric wall, an air-test was performed in order to ensure that the gastric wall was not disrupted. Meticulous hemostasis was achieved with the Ultracision®. Finally, we retrieved the specimen with a grasper and placed a free-flow drain on the site. The post-operative course of the patient was uneventful. The final pathology of the specimen demonstrated a 9,5×4 cm bi-spaced sack-like lesion, with a smooth capsulated wall. The inner wall was also smooth. Microscopically, the outside layer of the cyst consisted of smooth muscle fibers, while internally the lesion was lined with gastric mucosa (gastric duplication cyst mainly of the body and partially of the pylorus type).

V090 - Video - Gastroduodenal Diseases

Laparoscopic Gastric By-Pass for Obesity Concomitant with Cvasitotal Gastrectomy for Intestinal Metaplasia of the Gastric Antrum

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Aim: Due to massive duodeno-gastric reflux intestinal metaplasia of the gastric mucosa appeared.

Material and method: 56 years old female with morbid obesity (BMI=50 kg/m2) appeared to have intestinal metaplasia (anatomopathologically proven) due to a massive duodeno-gastric biliary reflux. The proposed laparoscopic gastric sleeve intervention has been switched to laparoscopic gastric by-pass with resection of the gastric remnant due to impossibility to assess the stomach through endoscopic approach and also due to the continuous exposure to the modified gastric mucosa to the aggression of the bile reflux.

Result: The laparoscopic intervention took ou 2,5 h with no postoperative complications.

Conclusion: On selected cases with proved biliary reflux from the duodenum to stomach and in the presence of modified gastric mucosa – intestinal metaplasia as a pre-malignant lesion, the association between the metabolic surgery and resection of the remnant stomach is feasible and justified.

V091 - Video - Gynaecology

Vaginal Mesh Erosion After Anterior and Posterior Sacrocolpopexy - Laparoscopic Management

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Aim: We present the case of a 59-year-old patient who was admitted in our department for vaginal stump mesh erosion after a previous sacrocolpopexy.

Methods: One year before, the patient, underwent total hysterectomy with bilateral adnexectomy and anterior and posterior sacrocolpopexy. The onset of current symptoms was insidious, by some pain in the lower abdominal quadrants and vaginal discharge. The physical examination revealed a 2/1 cm zone of extruded mesh on the posterior vaginal wall near the apex. Decision was taken to address the current condition by transabdominal minimal invasive approach. After laparoscopic dissection and excision of the mesh, the vaginal cuff was sutured, but as the posterior wall tended to prolapse again we suspend it to the sacral promontory using an ultralight polypropylene mesh.

Results: There were no intraoperative accidents or incidents. The operation time was 134 min. The postoperative course was uneventful. The patient was discharged in the 6th p. o. day and no recurrence of symptoms were observed during the 5-month follow-up period.

Conclusion: Laparoscopic excision and redo sacrocolpopexy was a safe and effective technique to use after vaginal mesh extrusion in case of complete vaginal vault prolapse repair.

V092 - Video - Gynaecology

Primary Mucinous Cystadenoma of the Retroperitoneum. Presentation of Our Case and a Systematic Review of the Literature

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Background: Primary retroperitoneal cystadenoma is a rare neoplasm. In the literature 43 cases are presented worldwide. Its biological behavior varies from benign to borderline or even malignant. The early diagnosis of this neoplasm is crucial due to the fatal complications, including severe bleeding, rupture, infection and malignant transformation.

Case Report: A 26-year-old female was admitted to our hospital with a left palpable abdominal mass, which was discovered six months earlier. She underwent a CT and an MRI scan that revealed a 9 cm septated cystic mass lying next to the sigmoid colon, over the left ovary and from the level of 2nd lumbar vertebra to the 4th lumbar vertebra.

Results: The patient underwent a diagnostic laparoscopy and the cyst was excised uneventfully. Histopathology examination revealed ovarian mucinous cyst-adenoma, while the epithelium of the cyst was lined by mesothelium cells.

Conclusion: The origin of the primary retroperitoneal cystadenomas is still unclear. Histologically these tumors are similar to the ovarian cystadenomas. The difference is that they can be located anywhere in the retroperitoneum. Surgical excision is mandatory and according to the histopathological grading follow up by an oncologist is suggested.

V093 - Video - Gynaecology

Technical Aspects of Laparoscopic Radical Hysterectomy in Morbidly Obese Patients with Early Stage Type I Endometrial Cancer

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Aims: to demonstrate the surgical technique and its benefits for the laparoscopic radical hysterectomy in morbidly obese patients with type I endometrial cancer.

Methods: a total of 12 patients were submitted to laparoscopic radical hysterectomy for type I endometrial cancer between 2014 and 2015 in Ponderas Academic Hospital. The first intraoperative step was to close the Fallopian tubes in order to prevent the tumor dissemination. The radical dissection consisted in isolation and section of the uterosacral, broad and cardinal ligaments, as close as possible to the pelvic sidewalls in order to provide a complete mesometrial excision while the ureter was dissected out of the tunnel and the uterine arteries were clipped and sectioned at their origin in the hypogastric arteries. Caudally, the dissection continued with urinary bladder dissection in order to provide an adequate resection of the specimen in the middle third of the vagina. The lymph node dissection was routinely performed at the level of the iliac vessels and obturatory fossa. However, in morbidly obese patients dissection plane in this area is routinely modified by the external iliac vessels and inguinal canal horizontalization due to the weight excess. Para-aortic lymph node dissection was also performed in four cases with poorly differentiated tumors.

Results: the mean BMI of the patients was 44,5 kg/m^2 while the mean operative time was 160 min. No conversion to open surgery or intraoperative complication was reported. The postoperative course was uneventful in all cases; however, two cases experienced a higher amount of lymphatic drainage so the drain tubes were maintained for five and seven days, respectively. The median number of retrieved pelvic lymph nodes was 18 (14–26), the histopathological studies revealing the presence of lymph node metastases in a single case. None of the patients presented para-aortic lymph node metastases.

Conclusions: laparoscopic radical hysterectomy in morbidly obese patients with endometrial cancer is feasible, clearly demonstrated in the video paper, with low rates of perioperative complications. The low number of invaded lymph nodes can be probably explained throughout the fact that in these cases endometrial tumors present an indolent course and a low biological aggressiveness.

V094 - Video - Intestinal, Colorectal and Anal Disorders

Cecal Volvulus Secondary to Bladder Sling Managed Laparoscopically: A Case Report and Review of Literature

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Introduction: Over the past two decades, sub-urethral sling procedures have become a popular option for surgical treatment of stress urinary incontinence. They are, however, not without complications; some of which lead to further surgical interventions. Some of the complications include voiding dysfunctions, urinary tract infections, retro-pubic hematomas, bladder injuries, vaginal extrusions and bowel injury have all been reported. Here we present a case of a 78 year old female that presented to our institution with cecal volvulus caused by an extruded bladder sling.

Case Presentation: 78 y/o female presented with a 1 day history of abdominal pain associated with nausea. Past medical history was significant for hypertension, hypothyroidism, lymphoma, total abdominal hysterectomy and a trans-vaginal sub-urethral sling procedure for a cytocele. CT scan revealed that the patient had a cecal volvulus and was subsequently taken to the operating theater for diagnostic laparoscopy. Upon insertion of the laparoscope, a large cecal volvulus with ischemic bowel was visualized with an adhesive band originating from extruded pelvic mesh as the causative agent. The colon was detorsed laparoscopically, and a small midline incision was made to resect the ischemic segment with primary ileocolic anastomosis. The patient had an uncomplicated postoperative course and was discharged home.

Discussion: Sub-urethral bladder sling surgery is becoming increasingly more popular for the treatment of female stress urinary incontinence. Multiple complications have been discussed in literature mainly dealing with postoperative pain and hematomas. However, more serious complications such as mesh extrusion and bowel injury are exceedingly rare. Here we presented a case of exposed intra-abdominal pelvic mesh causing a cecal volvulus. Even in such a complicated case, we document a systematic laparoscopic approach in order to reduce postoperative pain and length of stay. With advent of new techniques and mesh material, intra-abdominal catastrophes will have a wider array of etiologies and create a platform to challenge the advanced laparoscopic surgeon.

V095 - Video - Intestinal, Colorectal and Anal Disorders

Tips and Tricks of Rectal Anastomosis

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Introduction: Even experienced surgical teams can come up against difficulties when performing the rectal anastomosis.

Methods: A series of operative videos have been put together demonstrating specific challenges during rectal anastomosis with tips on how to manage them after an initial clip showing a standard rectal anastomosis being constructed with clear communication between the abdominal and rectal operators. These include incomplete locking of the stapler, multiple staple line defects, twisted anastomosis and withdrawal of stapler without disengagement first. Our policy of gaining consent from patients for filming during routine laparoscopic surgery has allowed us to put together this series of challenges encountered in real life.

Results: These and other similar video clips that we have accumulated in our unit have helped enormously in training.

Conclusion: Even though it can be very embarrassing to admit one's mistakes, the authors feel very strongly that dissemination of knowledge is an integral part of modern surgical practice.

V096 - Video - Intestinal, Colorectal and Anal Disorders

Laparoscopic Right Colectomy with Completive Extended D3 Anterior/Posterior Mesenterectomy in a Patient with complicated Anatomy

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This video presents technical approach to right hemicolectomy with central dissection of vessels and their branches with completive extended D3 anterior/posterior mesenterectomy in a patient with difficult anatomy.

The procedure includes the following operative steps. It's important to realize that the anatomy of the patient will influence the sequence of steps:

Peritoneal incision over the terminal ileal vessels and securing them in vessel loops.

Isolation of the ileocolic artery and its division.

Isolation of the middle colic artery Isolation of the right branch of the middle colic artery and its division.

Preparation of the anterior flap of the mesentery Division of the ileocolic vein.

Visualization of the gastrocolic trunk.

Preparation of the posterior flap of the mesentery.

V097 - Video - Intestinal, Colorectal and Anal Disorders

Embryological Consideration of Laparoscopic Complete Mesocolic Excision for Splenic Flexure Cancer

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Aims: Complete mesocolic excision (CME) with central vascular ligation (CVL) should be employed for the treatment of colon cancer patients because of its superior oncological outcomes. However, this technique is technically challenging in laparoscopic surgery for splenic flexure cancer because of the anatomical complexity of the splenic flexure.

Methods: We focused on the embryology and anatomy of the splenic flexure to overcome the difficulty of this surgery. Surgical technique of laparosocopic CME with CVL for splenic flexure cancer was presented in a video, and its validity was elucidated from the embryological point of view.

Results: Although the splenic flexure originally belongs to the hindgut in embryology, the tumor at the splenic flexure is often supplied by both superior and inferior mesenteric arteries (SMA and IMA). Therefore, lymph node dissection along the tumor vessels branching from SMA and IMA should be considered. First, lymph node dissection along the root of IMA and left colic artery (LCA) was performed. LCA was divided at origin and the inferior mesenteric vein (IMV) was also divided. Next, the mesocolon of the descending and transverse colon was dissected wide from the retroperitoneal tissue using a medial approach. The appropriate plane for dissection can be recognized just beneath the IMV, and the gauze should be placed in the dissected space. Then, the omental bursa was opened, and the transverse mesocolon was divided at the inferior border of the pancreas and the spleen using the inserted gauze as a landmark. The tumor vessel from SMA such as the accessory middle colic artery or the left branch of the middle colic artery was divided at this time. IMV was again divided at the inferior border of the pancreas. Finally, the lateral attachment of the descending colon to the left abdominal wall was dissected cranially or caudally. Transection and anastomosis of the colon was performed extracorporeally.

Conclusions: These procedures enabled us to remove the tumor with its entire regional mesocolon in an intact fascial-lined package. This approach is considered valid and useful for laparoscopic CME with CVL for splenic flexure cancer from the embryological point of view.

V098 - Video - Intestinal, Colorectal and Anal Disorders

Indocyanine Green-Enhanced Fluorescence Imaging to Assess Bowel Perfusion in Left-Sided Colorectal Resection

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Background: Anastomotic leakage (AL) is a feared complications following colorectal resection. Despite its etiology is multifactorial, insufficient perfusion is now considered to play a substantial role in the pathogenesis. The subjective estimation of perfusion is performed by the surgeon during operation assessing active bleeding at cut edges, and lack of tissue discoloration. However, subjective methods lack accuracy for anastomotic leak and, at present, there is no reliable intraoperative predictive test. This video shows intraoperative indocyanine green (ICG) fluorescence angiography to objectively demonstrate bowel perfusion before and after the anastomosis, in a patient undergoing laparoscopic left colectomy.

Methods: A bolus of 0.3 mg/Kg of ICG was injected intraoperatively to assess colonic perfusion prior to bowel transection and after completion of the anastomosis. A special video camera (KARL STORZ GmbH & Co. KG, Tuttlingen, Germany) equipped by a xenon light source providing both near infra-red fluorescence and visible light detection, was employed.

Methods: The first ICG bolus injection allowed to identify a good perfusion of the colic stump, before transection. The second ICG bolus injection, after the completion of the colorectal anastomosis, confirmed the presence of adequate perfusion at the anastomotic site.

Conclusions: Our results on 100 consecutive cases show that ICG-enhanced fluorescent angiography provides a reliable method to evaluate the perfusion of proximal and distal margins of resection during colorectal surgery Whether it can effectively prevent anastomotic leak should be demonstrated by further studied.

V099 - Video - Intestinal, Colorectal and Anal Disorders

Transanal Total Mesorectal Excision (TA-TME) for Rectal Cancer with Reusable Port and Indocyanine Green Fluorescence Control of Bowel Perfusion

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Introduction: The introduction of total mesorectal excision (TME) in surgical treatment of rectal cancer has substantially improved oncologic outcomes and increased sphincter preservation rate; nevertheless laparoscopic TME is still associated with long operative time and technical challenges in pelvic dissection, especially in male obese patients and in mid-low rectal cancer. TA-TME (Transanal TME) appears to be an alternative and feasible approach compared to standard laparoscopy.

Aim: This video shows our technique of TA-TME for rectal cancer with reusable port and ICG fluorescence control of bowel perfusion.

Methods: Patient is placed in lithotomic position and trocars are inserted as for a standard laparoscopic left hemicolectomy. High ligation of inferior mesenteric vessels is carried out, following by dissection of Toldt's fascia and full mobilization of the splenic flexure and sigmoid colon up to the peritoneal reflection. At this point a new reusable device for transanal endoscopic microsurgery (B-Port - Karl Storz, Tuttlingen, Germany) is inserted. The rectum is insufflated with CO_2 at 12 mmHg pressure with AirSeal advanced insufflating system (Conmed, Milford, CT) and a full thickness pursestring suture is placed 1 cm below the tumor. Using standard monopolar electrocautery the rectum is transected circumferentially and TME is then performed following the 'holy plane' until the peritoneal reflection. In the meantime the "abdominal team" starts superior TME dissection until the rectum is fully mobilized. The rectosigmoid specimen is then extracted transanally, and bowel perfusion of colonic and ano-rectal stumps is checked with Indocyanine Green (ICG) enhanced fluorescence imaging. The descending colon is then divided and a colo-rectal end-to-side stapled anastomosis is performed using EEA 33 (Covidien, Mansfield, MA). At the end of procedure the anastomosis is checked with idro-pneumatic test and a diverting loop ileostomy is created.

Conclusions: TA-TME for mid and low rectal cancer is a feasible and safe procedure that offers several advantages such as precise identification of the distal margin of the tumor, fairly easier dissection of distal mesorectum compared to standard laparoscopy and avoids the need of minilaparotomy, without compromising oncological principles of rectal surgery. Nevertheless this approach requires an high specialized team and long-term outcome evaluation is needed.

V100 - Video - Intestinal, Colorectal and Anal Disorders

The Short-Term Outcome of Laparoscopic Repeat Hepatectomy

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Aims: Laparoscopic repeat hepatectomy is challenging because of the adhesion and the difficulty of identifying the anatomical structures. We now perform laparoscopic repeat hepatectomies for almost all cases who have undergone hepatectomy previously. This study evaluates our short-term outcome of laparoscopic repeat hepatectomy compared with laparoscopic primary hepatectomy.

Methods: Laparoscopic hepatectomy was performed for 119 patients from April 2014 to October 2016. Twenty-three patients underwent laparoscopic repeat hepatectomy (LRH group), and 96 patients did laparoscopic primary hepatectomy (LPH group). In LPH group, 6 patients underwent other organ resection simultaneously, who were excluded from this study. Then 23 patients for laparoscopic repeat hepatectomy was compared with 90 patients for the laparoscopic primary hepatectomy.

Results: Between LRH and LPH group, patients' characteristics were not significantly different. LRH group included 15 patients with twice hepatectomy, 4 patients with third, 3 patients with forth, and one patient with fifth. No case of LRH was converted to laparotomy, but one case of LPH was converted because of the hard adhesion. The median operative time (LRH 213 min. vs. LPH 194.5 min.), estimated blood loss (LRH 127 ml vs. LPH 214 ml), intraoperative transfusion (LRH 4.3% vs. LPH 4.4%), morbidity (≥Clavien-Dindo classification Grade III; LRH 8.7% vs. LPH 2.2%) and postoperative length of stay (LRH 6.5 days vs. LPH 7.0 days) showed no significant difference.

Conclusion: Laparoscopic hepatectomy is useful for the patients who have underwent hepatectomy previously.

V101 - Video - Intestinal, Colorectal and Anal Disorders

A Standardized Inferior Approach for Robotic Right Hemicolectomy with Complete Mesocolic Excision

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Aims: The author presents the VIDEO of a standardized inferior approach to performing robotic right hemicolectomy with complete mesocolic excision, using a suprapubic port configuration with the da Vinci Xi system.

Methods/Results: The steps of the surgery include:

Optical port entry at Palmer's point. 2. Suprapubic port placement along the skin crease. 3. Docking of the dV Xi patient cart from patient right, for upper abdominal procedure. 4. Inferior approach to caecum, with retroileal dissection. 5. Identification and skeletonization of SMV, with complete mesocolic excision off its border. 6. Intracorporeal bowel transection followed by intracorporeal anastomosis. 7. Pfannenstiel specimen extraction.

Conclusions: This novel approach to robotic right hemicolectomy is feasible and reproducible.

V102 - Video - Intestinal, Colorectal and Anal Disorders

POPS - Prolapse Organ Pelvic Suspension

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Aims: Case-report of a laparoscopic pelvic organ prolapse suspension.

Pelvic organ prolapse (POP) has an important impact on quality of life of female patients. It has a very negative interference in terms of physical mobility, pain, emotional reaction, sexual activity, sleep, energy and social isolation.

Pelvic organ prolapse suspension is the result of an extensive study of Longo et all, showing that genital prolapse is associated with internal or external rectal prolapse and/or rectocele in 100% of cases. This association was not corrected with any conventional technique.

Methods: Clinical data collected from computerized records of the patient process and records, video and photography from surgery. Literature review about subject, using Pubmed.

Results: Female, 50 years old, with relapsed genital prolapse and obstruction defecation symptoms. This patient was submitted to an anterior colpoplasty, with a posterior colpoperinorrafy in 2010 with no resolution of the symptoms. MRI revealed a perineum symdrome with no pelvic dyssynergia.

Our patient underwent laparoscopic pelvic organ suspension in Braga's Hospital in January 2017 without any complications intra and post-operatory period. She was discharged on the first day after surgery. Although the short follow up period, the patient currently reports an important improvement of previous symptoms.

Conclusions: The authors report this successful surgical treatment of a pelvic organ prolapse, proving the safety and effectiveness of this uncomplicated laparoscopic procedure and the obvious advantages compared to the classical approach in the female patient with rectal prolapse.

V103 - Video - Intestinal, Colorectal and Anal Disorders

Laparoscopic D3 Lymph Node Dissection for Transverse Colon Cancer

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Background: The difficulties of D3 lymph node dissection (LND) of the middle colic artery (MCA) for transverse colon cancer are caused by the complex anatomy around the transverse mesocolon (TM) associated with multiple vessels with various branches, surrounding organs, layers and complicated, irregular adhesions.

Methods: Our laparoscopic approach involves a lateral-to-medial approach to the left-side TM and a medial-to-lateral approach to the right-side TM with D3 LND. First, it begins with opening the left-side greater omentum and dissecting the posterior wall of the omental bursa and anterior layer of the TM along the inferior border of the pancreas, where a gauze is placed. The TM is spread cephalad. A window in the TM is opened in the gauze seen through the posterior layer of the TM and the left-side TM can be safely separated from the pancreas. Second, the right-side TM is mobilized from the duodenum and the pancreatic head to expose the superior mesenteric vein (SMV) and gastrocolic trunk (GCT). The accessory right colic vein (ARCV) branching from GCT is visible through the posterior layer of the TM. ARCV is divided by minimum dissection of the TM to avoid splitting it. At this time, the cranial border of LND can be recognized to be between the inferior border of the pancreas seen through "Window in the TM" and GTH. MCA is then divided after dividing the middle colic vein. Therefore, LND can be safely completed by exposing the ventral aspect of SMV to the inferior border of the pancreas. A gauze is placed on the pancreatic head. Finally, The TM is spread caudally. The right-side greater omentum is divided to see the gauze through the TM. The right-side anterior layer of the TM can be safely separated from the pancreas.

Results: From March 2012 to December 2016, we performed this approach for D3 LND for transverse colon cancer for 39 patients. The median operative time and blood loss were 269 min and 53 g, respectively. There were no conversions to open surgery and organ injury.

Conclusions: This is a safe and effective technique for performing D3 LND for transverse colon cancer.

V104 - Video - Intestinal, Colorectal and Anal Disorders

Single Docking Robotic Anterior Resection with the da Vinci Xi System with Integrated Table Motion. Standarised Technique

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The da Vinci Xi® coupled with the integrated table motion enables the surgeon to perform single docking robotic rectal surgery without having to change the port configuration during the operation and reduces the time the patient spends in the steep Trendelenburg position. We present a standardised surgical technique for anterior resection applied on a 75-year-old male (BMI 27) that had received neoadjuvant chemoradiotherapy for a low rectal tumour. Pre-operative MRI suggested T3b N1 CRM less than 2 mm.

V105 - Video - Intestinal, Colorectal and Anal Disorders

Technical Particularities in Laparoscopic Approach of the Left Colic Flexure Tumors

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Aims: Left colic flexure situation of the tumors is one of the most challenging due to the profoundness of this area, vicinity with the spleen and possibility for tumors to invade the left kidney, the spleen, the tail of the pancreas or the posterior abdominal wall. We aim to demonstrate that the laparoscopic approach offers superior visualization of this area, compared to open surgery.

Methods: We use standard arrangement for laparoscopic approach of the left colon. We use 45 degrees' endoscope. The approach is medial to lateral, with primary vessels ligation. The colo-colic anastomosis is performed side by side, intracorporeally, with linear stapler. The specimen was extracted through a suprapubic incision.

Results: In our surgical department, between 2011 and 2016, the laparoscopic approach for splenic flexure tumor resection has been used in 15 patients. The surgeries have been performed electively, after bowel preparation. Laparoscopic approach was suitable in all the cases. No conversion to open surgery was made. Average time of surgery was 190 min. No intra-operative nor post-operative complications were encountered. An average of 18 lymph nodes were harvested in these cases. The 1–5 years oncological outcomes are presented.

Conclusion: The particular aspects of the laparoscopic approach for splenic flexure tumors are demonstrated in this video. The laparoscopic approach of the splenic flexure tumors offers a better visualization than open surgery, due to angled telescope and magnification, in a very demanding area and operative gestures are made safely.

V106 - Video - Intestinal, Colorectal and Anal Disorders

Tips and Tricks in Laparoscopic Management of a Giant Colonic Tumour

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Introduction: Laparoscopic management of giant colonic tumours is not preferable. The anatomy is distorted and the tumour obstructs the lateral views of dissection. A large tumour is difficult to handle and may require a long midline incision at the end of the procedure.

Methods: We present the case of an 80 year old lady with a 12×10×10 cm sigmoid tumour on CT scan. We rely on gravity and the weight of the tumour to provide critical views during dissection. Effective table position and tilt is necessary. Minimal handling of the tumour is achieved by pushing the tumour and grasping the appendices epiploicae rather than bowel wall. A wide medial dissection is performed down to the pouch of Douglas. Medial dissection concludes when the lateral colonic attachment is reached. The weight of the tumour and counter traction by grasping the lateral peritoneum helps in dividing the lateral attachment. An 8 cms. transverse suprapubic skin incision is made and cutaneous flaps are raised. Linea Alba is divided vertically for 12 cms. The tumour is delivered and resected.

Results: The post operative recovery was smooth and the patient was discharged within 48 h.

Conclusion: Laparoscopic management of giant colonic tumours is possible through a small transverse skin incision. This can be achieved without compromising the safety of specimen extraction. Establishing a wide medial dissection and minimal tumour handling are critical. Optimal pre-operative planning helps in reducing post-operative pain and length of stay.

V107 - Video - Intestinal, Colorectal and Anal Disorders

A Step by Step Demonstration of Safe Laparoscopic Cross Stapling of the Rectum

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Introduction: One of the challenges in laparoscopic colorectal surgery has always been to safely carry out a cross stapling of the rectum deep down in the pelvis during a low anterior resection.

Methods: A safe technique for cross stapling of the rectum using an articulating endostapler is demonstrated both externally, and inside a narrow male pelvis. In order to achieve optimal and safe positioning the endostapler, the jaw is passed across the rectum and the distal end of the endostapler articulated perpendicular to the rectum by flexion against the pelvic side wall. Careful views from the left lateral aspect ensures no lateral structures, for example the ureter, are accidentally included in the jaw of the endostapler. The stapler is manipulated into a vertical position by the combined movements of abduction and internal rotation at the shoulder, and pronation at the wrist. The handle of the endostapler is then rotated into a comfortable position for firing without moving the tip of the stapler therefore avoiding shearing forces.

Results: This technique has been used on over 300 cases without any untoward incident.

Conclusion: This video demonstrates a systematic approach to low rectal cross stapling which has proved to be safe, effective, reproducible and transferable.

V108 - Video - Intestinal, Colorectal and Anal Disorders

Techniques of Laparoscopic Reversal of Hartmann's Procedure

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A reversal of Hartmann's procedure is generally much more difficult than a reversal of temporary stoma due to its severe adhesion depending on the precedent disease. Although a feasibility and advantage of laparoscopic reversal of Hartmann's procedure has been reported recently, it is still considered a challenging procedure. Here we show our techniques of laparoscopic reversal of Hartmann's procedure.

The preoperative evaluation included an enhanced CT scan, and colonoscopies and enemas both from the stoma and the anus. A small laparotomy was performed through the skin incision along the stoma. After an adhesiolysis near the stoma hole by an open method, a single multichannel trocar (EZ access; Hakko, Chikuma, Nagano, Japan) was installed. The single-port laparoscopic adhesiolysis was performed through the trocar and additional trocars were inserted at the right lower abdomen if needed. The adhesiolysis near the sigmoid and descending colon was done as much as possible in order to mobilize the oral side of the anastomosis planned. Usually we avoid the adhesiolysis just near the rectal stump and use the anterior wall of the rectum for the anastomosis to prevent an unnecessary rectal injury. After an installation of the anvil of a circular stapler by the open method, the laparoscopic end-to-side anastomosis using the circular stapler was performed at the anterior wall of the rectum. After an air leak test, a transanal tube and a pelvic drain were inserted and a hyaluronic acid-carboxycellulose membrane (Seprafilm Adhesion Barrier; Sanofi Biosurgery, Bridgewater, NJ, USA) was placed under the stoma site.

Our techniques include the adhesiolysis through the single port and the end-to-side anastomosis not a double stapling technique. These enable us to perform the safer laparoscopic reversal following Hartmann's procedure even with the severe adhesion, and could reduce serious complications such as adhesional ileus and anastomotic leakage.

V109 - Video - Intestinal, Colorectal and Anal Disorders

Hybrid-Hand Assisted Laparoscopic-Robotic Surgery (HALRS) in Total Proctocolectomy with Ileal Pouch-Anal Anastomosis in Familiar Adenomatous Polyposis

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Background: Total proctocolectomy with ileal pouch–anal anastomosis (IPAA) is recommended as a prophylactic procedure in patients diagnosed with familial adenomatous polyposis (FAP). Minimally invasive surgical techniques have recently been used to perform large bowel resections for the treatment of both malignant and benign colonic diseases, including FAP and UC. However, even if laparoscopy has become very popular for colon surgery and is largely used also in rectal surgery, laparoscopic total proctocolectomy with IPAA has not had the same dissemination mostly due to the intrinsic technical limitations of the laparoscopic approach in the deep pelvis. We present our surgical technique of hand-assisted hybrid laparoscopic–robotic total proctocolectomy with restorative IPAA for patients diagnosed with FAP.

Materials and Methods: An 18-years old man with FAP and a colonscopy with hundreds of sessile polyps (low-grade dysplasia) was referred to our centre. The colectomy was performed laparoscopically with hand assistance through a suprapubic incision, also used to fashion the ileal pouch. The proctectomy was carried out with the da Vinci Si. The IPAA was hand-sewn through a trans-anal approach.

Results: The procedure was successfully completed in 370 min. There were no surgical complications or a need for conversion to laparotomy. The patient had an uneventful recovery and was discharged from hospital after 6 days.

Conclusions: We believe that hybrid laparoscopic–robotic proctocolectomy with IPAA is an appealing alternative to laparoscopy and open surgery in selected patients with FAP or UC. The enhanced surgical dexterity offered by robotic assistance is expected to overcome some of the limitations of conventional laparoscopy, thus improving the acceptance of minimally invasive techniques for proctocolectomy with IPAA.

V110 - Video - Intestinal, Colorectal and Anal Disorders

Laparoscopic Subtotal Gastrectomy in Week Surgery Setting

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Aim: We want to highlight the feasibility of subtotal gastrectomy using a totally laparoscopic procedure in Week Surgery. The adoption of the Enhanced Recovery After Surgery (ERAS) Guidelines ensures a fast resumption of the daily routine.

Methods: A 49 years old woman with a 3 months history of nausea and vomiting, associated with a loss of weight of almost 10 Kg, underwent surgery after a diagnosis of gastric neoplasia made by esophagogastroduodenoscopy (EGD). The mass was located at the angular notch and stretched toward the pylorus. CT showed the presence of various adbominal and pelvic lymphadenopathy and a single left paraaortic lymph node. No secondary lesions were highlighted. Laparoscopic subtotal gastrectomy was performed in October 2016 with the use of 5 trocars. After the access to the omental bursa, the section of the gastroepiploic vessels from Van Goethem's point was performed. The duodenum was disconnected 2 cm below the pilorum with the aid of endoGIA. The stomach was sectioned using 4 endoGIA refills mantaining a free-from-neoplasia space of about 6 cm (the mass location was possible thanks to the presence of scar retraction at the angular incisure). A standard D2 lymphadenectomy and colecistectomy were performed. Reconstruction was made using Roux-en-Y technique.

Methods: The entire procedure lasted 255 min. An early esophageal transit with Gastrografin was performed the day after surgery (PD). The patient started to drink on the 1st postoperative day (PD). Feeding started on the 2nd PD. No complications occurred during recovery and the patient was discharged in PD 4. Histological examination classified the mass as a diffuse type according to Lauren's criteria and according to TNM classification the tumor was pT1a pN0 G3 R0, with a total number of 30 lymph nodes removed.

Conclusion(s): Laparoscopic subtotal gastrectomy is a safe and feasible procedure in a Week Surgery setting in selected and well studied patients.

V111 - Video - Intestinal, Colorectal and Anal Disorders

Laparoscopic En Bloc Total Mesorectal Excision Post Chemoradiotherapy

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In this video we demonstrate a laparoscopic total mesorectal excision (TME) on a 72-year-old male patient with BMI 30, T4b anterior rectal cancer who underwent pre-operative neoadjuvant chemoradiotherapy. Surgery was performed at 12 weeks post treatment. The tumour was involving the left seminal vesicle, therefore an en bloc resection of the seminal vesicle was performed to achieve R0 resection. The standardised approach to laparoscopic TME was employed during this procedure.

V112 - Video - Intestinal, Colorectal and Anal Disorders

Abdominoperineal Resection with the da Vinci Xi After Re-growth Following Chemoradiotherapy

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In this video we present an abdominoperineal excision using the da Vinci Xi on a 34-year-old lady who developed a low rectal adenocarcinoma. As the CRM was threatened anteriorly she underwent neoadjuvant-chemoradiotherapy. She had a complete clinical response following neoadjuvant chemoradiotherapy and was added on a watch and wait programme. Unfortunately, one year following her treatment a lesion was visible on endoscopy which was also confirmed on MRI and endoanal US. Biopsy confirmed adenocarcinoma re-growth and she was therefore scheduled for robotic abdominoperineal excision. As her re-growth was luminal and small in size decision was made to perform a tailor made abdominoperineal resection for her. Due to close proximity of posterior vaginal wall to CRM a small disc of posterior vaginal wall was incorporated in the specimen. This procedure is innovative since almost all of the abdominoperineal resection is done from above, leaving very little dissection required from the perineal side. Vaginal wall defect was repaired. Perineal dissection completed and LIF colostomy fashioned on a pre-determined site. Her post-operative histology confirmed completely excised yPT2 N0 (0/34) R0.

V113 - Video - Intestinal, Colorectal and Anal Disorders

Laparoscopic Colorectal Surgery in the Presence of Bowel Obstruction - Appropriate Selection is the Key

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Introduction: In cases of obstruction, deflating the bowel through a nasogastric tube (NGT), regular aspiration and on-table lavage helps to improve views.

Methods:

Case: Right colonic obstruction with small bowel dilatationPre-operative NGT aspiration and a laparoscopic needle helps to decompress the large bowel and provides enough space to perform a right hemicolectomy. Milking of the small bowel contents towards the stomach facilitates closure of the wound.

Case: Small bowel obstruction after laparoscopic right hemicolectomy CT showed internal herniation through the mesenteric defect. Following 48 h of hourly NGT aspiration the small bowel dilatation resolved. The defect is closed intracorporeally by a continuous self-locking suture.

Case: Closed loop large bowel obstruction due to stricturing sigmoid tumour An ileostomy site is fashioned. An alexis retractor is used to deliver caecum. Foley's catheter is used for decompressing the large bowel to create adequate space for the operation. A high anterior resection is performed. A wide-bore plastic tube is inserted in the proximal bowel and connected to an under water seal. Ontable lavage is performed using 10 litres of normal saline.

Conclusion: The success of laparoscopic approach in managing bowel obstruction is dependant on decompressing dilated bowel to an acceptable degree. Failure to decompress is an indication for conversion to open surgery. Gross bowel dilatation is a contraindication for laparoscopic surgery.

V114 - Video - Intestinal, Colorectal and Anal Disorders

Value of Indocianine Green in Extracolonic Recurrences of Colon Adenocarcinoma

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Aims: To evaluate the usefulness of indocyanine green in localization and complete removal of extracolonic colon cancer recurrence in case of difficult localization.

Methods: A 75-year-old male patient who went to emergency surgery in March 2004, due to intestinal obstruction. We performed A exploratory laparoscopy was performed in which obstructive sigma neoplasm was evidenced, and Hartmann's procedure was done. The histological result is moderately differentiated adenocarcinoma, pT4apN1bMx. The patient underwent adjuvant chemotherapy and once completed, in February 2015, Hartmann's reversal procedure was performed.

In September 2016, in the control CT scan, a single extracolonic pelvic tumor was identified, findings that were confirmed by PET / CT, remaining negative diagnostic tests except CEA (4,8).

Results: Exploratory laparoscopy is performed using indocyanine green by fluorescence, for the localization and complete removal of the recurrence.

Conclusions: Indocyanine green in colon surgery is useful to assess the vascularization of the intestinal stumps previous to anastomosis. this dye could be helpful in extracolonic colon cáncer recurrences to:

Identifie cases of difficult intraoperatory localization, due to size or place.

Diagnosis between recurrences vs. postsurgical fibrosis.

Confirmation complete removal con free margins.

V115 - Video - Intestinal, Colorectal and Anal Disorders

Laparoscopic Resection of a T4 Sigmoid Cancer

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Aim: To present the successful laparoscopic resection of a T4 sigmoid cancer (with invasion of the urine bladder and small intestine).

Methods: A 73 years old male patient presented for surgical treatment of a sigmoid adenocarcinoma at 30 cm from anal verge. A laparoscopic Hartman resection en block with part of the urine bladder and small intestine was performed. An end colostomy of the descending colon, small intestine side-to-side stappled anastomosis and suturing of the urine bladder was performed. We present an intraoperative video of the surgical technique and the postoperative outcome.

Results: A liquid diet started on 1st postoperative day. On 6th postoperative day, patient presented nausea and vomit. A nasogastric tube was inserted and feeding was withheld. Patient had a contrast tomography with gastrografin and a partial obstruction at the point of small intestine anastomosis was recognized. Patient remained nill per os and with the nasogastric tube in place until postoperative day 11, when bowel movement were established. On 12th postoperative day patient started on oral feeding. On 14th postoperative day patient was discharged. The pathologic evaluation revealed a T4bN0 sigmoid adenocarcinoma of intermediate differentiation with 16 excised lymph nodes.

Conclusions: Laparoscopic treatment of T4 colon cancer is feasible and safe without compromising the oncological benefit.

V116 - Video - Intestinal, Colorectal and Anal Disorders

Laparoscopic Placement Preformed PVDF Mesh in Parastomal Hernia Prophylaxis. Initial Experience

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Introduction: The use of definitive colostomies is largely unique to low-grade rectal cancer, and rarely should we use it in other pathologies of the colon. Approximately 100,000 people in the United States undergo operations that result in a colostomy or ileostomy each year. Between 2008 and 2012, 6,204 interventions for rectal cancer were carried out in 54 hospitals of the Catalan Health System. The percentage of definitive colostomies ranged from 37.0% in 2008 to 42.1% in 2012. This represents an average of about 500 colostomies per year in Catalonia. According to different authors between 30% and 40% of the definitive colostomies will suffer an hernia in its evolution. Faced with this problem and in consonance with recent publications we consider the prophylactic use of meshes in the context of Laparoscopic Miles Surgery.

Material and Methods: We decided to implant as a prophylactic mesh in all our patients the need to perform a definitive colostomy. In the first case, we try to use a PTFE mesh, but we have had many problems with it because it is not a translucent mesh and it is very difficult to move and use. Subsequently, we began to use a preformed PVDF mesh (polyvinylidene fluoride).

Since February 2015, 7 PVDF meshes have been implanted in 5 men and 2 women with a mean age of 67 years, who presented a very low rectal cancer. There were no intraoperative complications, the use of laparoscopic mesh was relatively easy, there were no mesh related perioperative complications, the average stay was 7 days and, although the follow-up is scarce, Control CT at 3 months and later framed in oncological control, there is no presence of parastomal hernias.

Conclusions: Despite the number of prophylactically implanted prostheses is very small, studies have begun to show that prophylactic use of meshes can benefit tributary patients with a definitive colostomy. The question is: which mesh will be the most appropriate? The preformed PDVF that we present in this video, seems appropriate with an easy use by laparoscopy, without perioperative problems and without hernias during this short period of follow-up.

V117 - Video - Intestinal, Colorectal and Anal Disorders

Sigmoid Diverticulosis With Bladder Fistula

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Diverticulois of the left colon is an inflammatory benign disease associated with unpleasant morbidity which lead to pneumaturia and repetitive urinary infection. The tomography the colonoscopy may suggest the diagnostic but the histology confirms it. The differential diagnostic is a malignant lesion and so it's mandatory to perform the surgery with an oncologic plan. This clinical case is about a young man with a mass which includes the left colon the bladder and the ileo-cecal appendix; an ureteral stent was placed to make the surgery safer and a sigmoidectomy with an ileo-cecal appendectomy is realized.

V118 - Video - Intestinal, Colorectal and Anal Disorders

Minimally Invasive Surgical Approach to Small Bowel Obstruction

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Due to the lack of laparoscopic experience to work in a small space (small bowel distension), small bowel obstruction seems to be a relative contraindication for a minimally invasive approach. In other hands, many patients have co-morbidities, and consequently it is key to work with a low intra-abdominal pressure to prevent any conversion for pneumoperitoneum intolerance. Small bowel obstruction must be resolved by experts in order to prevent any excessive mobilization and iatrogenic perforation.

This clinical case is about an old man who had presented a gastric cancer and a total gastrectomy with Y Roux anastomosis has been realized.

One year later the patient presented several obstruction crises and a laparoscopic approach is decided. First the laparoscopic approach permits to confirm the diagnostic; in this case it may be a peritoneal carcinomatosis..or a simple mechanical obstruction. The clinical case point out the feasibility and the benefice of the laparoscpic approach.

V119 - Video - Intestinal, Colorectal and Anal Disorders

Our Procedure of Laparoscopic Resection for Descending Colon Cancer

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Aims: Laparoscopic operation for descending colon cancer is difficult. The reasons are as follows: (1) Descending colon cancers have a small percent of large intestine malignancies, (2) For lymph node(LN) dissection, it is necessary to resect left colic artery(LCA) at the root while preserving inferior mesenteric artery(IMA), (3) There is a variety of branching of LCA, (4) It is difficult to dissect and mobilize splenic flexure. Our device and procedure are shown with a video.

Methods: CT colonography and angiography are indispensable as preoperative examinations. Resection of LCA and lymph node dissection can be performed safely by this information. After checking the tumor, anal and oral cut end are marked by short tapes. Both cut end is 10 cm far from the tumor. The step of LN dissection is as follow: Peritoneum of the anterior surface of aorta is incised, and the space between IMA and aorta is dissected. At this time, it is important to preserve superior hypogastric plexus. The tissue around IMA is detached from IMA beyond furcation area of LCA, and LCA is cut at its root. Next step is to mobilize colon: When retroperitoneal space of descending colon is dissected, lifting mesenterium of descending colon by assistant's instrument makes good surgical field. Lateral side of sigmoid and descending colon is mobilized from SD junction to splenic flexure. The omentum is transected, and omental bursa is open. The mesenterium of transverse colon is dissected at inferior margin of pancreas, and splenocolic fold is transected. By these operation, mobilization of resected colon is completed. The final step is to transect mesenterium of descending and tranverse colon: mesenterium is transected from the root of it to the anal and oral cut end of colon. This procedure makes incised wound smaller because we need to take only resected colon and mesenterium out of abdominal cavity. The oral cut end of colon is elevated from wound, and transected by endostapler. Resected colon and mesenterium are extracted, and another cut end is transected. End-to-end anastomosis is performed finally.

Conclusions: Our operation is thought to be safe and useful.

V120 - Video - Intestinal, Colorectal and Anal Disorders

Assessment of Colonic Stumps Perfusion by Indocyanine Green-Enhanced Fluorescence in Laparoscopic Colorectal Surgery

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Aims: In recent years, Indocyanine Green(ICG)-enhanced fluorescence has been introduced in abdominal surgery to provide detailed anatomical informations during surgery. ICG is a molecule which fluoresces when excited with Near Infra-Red light: following intravenous injection, ICG is rapidly bound to plasma proteins and then provides a real-time angiography.The incidence of anastomotic leak after colorectal resection rise from 0,5 to 30% with an economic impact on the increase of patient health care costs. The aim of our study is the use of ICG imaging during laparoscopic colorectal resections to intra-operatively assess the adequate perfusion of large bowel prior and after the anastomoses, to reduce the risk of anastomotic leak.

Methods: Our study is conducted on laparoscopic colorectal resections. During left colectomy or anterior rectal resection, after transection and anvil introduction in the proximal stump, a bolus of 5 ml IGG diluted in saline solution at a concentration of 0,3 mg/kg, is injected: it provides a real-time angiography of colonic perfusion. Fluorescence is evaluated by full HD camera system IMAGE1 S that can operated for white and fluorescence imaging. Switching to NIR mode the fluorescence is displayed in about 30–50 s. If there is an ischemic area on colonic or rectal margin, a new transection is performed within an area of good perfusion. Another bolus of 5 ml ICG solution is injected once the colorectal mechanical anastomoses is performed, to confirm the adequate vascularization.

Results: Five cases of left hemicolectomy are enrolled. The fluorescence shows a real-time angiography after the transection when there is no tension of the stumps that are ready for the anastomoses. In all cases the imaging displayed a good perfusion of colonic and rectal margin and at the anastomotic site. No intraoperative complication and anastomotic leaks occurred.

Conclusions: ICG-enhanced fluorescence imaging is a safe and effective tool to increase visualization during colorectal laparoscopic surgery; it's easy to replicate, cheap and it can be employed also in small hospitals, without learning curve. It's recommended to facilitate the assessment of vascularization during colorectal resections in order to reduce the incidence of anastomotic leak.

V121 - Video - Intestinal, Colorectal and Anal Disorders

Laparoscopic Resection of Bleeding Soft Tissue Tumor of Small Bowel

M. Hussein

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Aim: Laparoscopic resection of bleeding soft tissue tumor of small bowel.

Methods: The video will show the steps used to resect a bleeding soft tissue tumor (jejunal lipoma) presented to ER Department at the American University of Beirut Medical Center transferred with 4 units of blood and treated by laparoscopic exploration and resection.

Results: Patient had smooth post operative course and discharged 3 days post surgery.

V122 - Video - Intestinal, Colorectal and Anal Disorders

Laparoscopic Resection of Distal Ileum and Right Colon for Complicated Crhons Disease

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Aim: Laparoscopic resection of distal ileum and right colon for complicated chrons disease.

Methods: Crhons Disease is associated with complication of fistula and stenosis due to progression of the disease. The video will show the steps used for resection of stenotic distal ileum and affected Right colon with laparoscopic distal ileum and Right colon resection and intracoporeal anastomosis of ileum to transverse colon.

Results: Patient had smooth post operative course and discharged from hospital 5 days post operation.

V123 - Video - Intestinal, Colorectal and Anal Disorders

Laparoscopic Total Colectomy Superior Technique

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Aim: Laparoscopic total colectomy with ileo rectosigmoid anastomosis. A superior technique.

Methods: I report my experience of Laparoscopic Total Colectomy at the American University of Beirut Medical Center 9 cases of total colectomy for multiple polyposis with ileo rectosigmoid anastomosis for the treatment of multiple colonic polyposis.

Results: The video shows a superior technique for laparoscopic total colectomy using 7 trocars where dissection of all arteries and veins clipped with 1 cm Endoclip and the distal colon resection using Endo GIA 60 mm –Echeron cartilage and intra corporeal anastomosis using Endo GI 60 mm and the colon removed through 5 cm incision in the left lower quadrant with muscle splitting. All patients did well had clear fluid 48 h post operation.

Conclusion: Laparoscopic total colectomy is feasible with reduced operative time and hospital stay in centers of laparoscopic excellence.

V124 - Video - Intestinal, Colorectal and Anal Disorders

The State of Art Technique for the Treatment of Internal Hernia Complication Post Roux En Y Bypass

M. Hussein

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Aim: Treatment of internal hernia complication post Roux en Y bypass.

Methods: Laparoscopic Roux en Y Bypass is one of the Gold standard technique for the treatment of Morbid Obesity associated with long term complication of intestinal obstruction due to internal hernia at the level of jejunojejunostomy and Peterson defect that if not treated on emergency basis associated with bowel gangrene and even mortality.

Results: The video will show the steps used to reduce incarcerated bowel and repair of the internal hernia successfully without shifting to open surgery.

V125 - Video - Intestinal, Colorectal and Anal Disorders

Laparoscopic Treatment of Perforated Diverticulitis with Purulent Peritonitis

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Aims: Perforated diverticulitis with purulent peritonitis (Hinchey III) has traditionally been treated with surgery including colon resection and stoma (Hartmann procedure) with considerable postoperative morbidity and mortality. Laparoscopic lavage has been suggested as a less invasive surgical treatment.

Methods: A 78-year-old woman with a 10-day history of abdominal discomfort exacerbed during the last 48 h. CT scan showed neumoperitoneum accompanied by free fluid and a 6 cm collection adjacent to descending colon showing diverticula suggestive of covert perforation. After 48 h of non-response to medical treatment, associated with the impossibility of percutaneous drainage through interposition of intestinal loops, colon and lumbar vessels, urgent surgical intervention is decided.

Results: Laparoscopic lavage of all 4 quadrants was performed with saline, 3 L or more, of body temperature, until clear fluid was returned. Two non-suction J-Pratt drains were placed. Intravenous antibiotics were continued for a minimum of 72h, then oral antibiotics were continued for 1 week. Oral fluids were commenced on the first postoperative day and solids were subsequently introduced, depending on clinical progress.

Conclusion: Laparoscopic management is reasonable alternative to the traditional open resection for Hinchey grade II-III perforated diverticulitis with generalized peritonitis. This approach has a low mortality rate despite patient co-morbidity and disease severity. Benefits include stoma avoidance and minimal wound infection. Subsequent elective resection is probably unnecessary and readmission in the medium term is uncommon.

V126 - Video - Intestinal, Colorectal and Anal Disorders

Laparoscopic Management of Paraduodenal Hernia

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Internal hernia is a rare cause of intestinal obstruction & constitutes 1% of all intestinal obstructions. Paraduodenal hernias are 50–55% of all internal hernias.

Clinical diagnosis is difficult due to non specific presentations. Contrast CT is the effective diagnostic tool. Internal hernia is commonly managed by open surgery. If expertise is available, Laparoscopic approach is an alternative in uncomplicated cases to bring down the morbidity.

A 42 years old lady was presented with intermittent colicky abdominal pain and bilious vomiting for three days. She had three episodes of similar pain and vomiting in past three months relieved with conservative treatment. A tender soft abdominal mass was felt on the left hypochondrium. Contrast CT revealed left paraduodenal hernia with entrapped small bowel loops. Diagnostic laparoscopy through sub umbilical 10 mm and two 5 mm ports lateral to recti confirmed the diagnosis. Crowded small gut loops up to ileocaecal junction were seen entering through left paraduodenal hernia opening. Adjacent mesentery was found to be oedematous. Bowel loops were adherent to the neck making it difficult to reduce. Gentle blunt dissection was carried to pull out the loops. Loops were examined for its vitality. Hernia opening was closed with 3–0 vicryl. Normal saline irrigation was done and ports were closed. Post operative recovery was uneventful. Patient was discharged on 3rd post operative day.

V127 - Video - Intestinal, Colorectal and Anal Disorders

Single-Site Laparoscopic Extended Right Hemicolectomy with Radical Lymph Node Dissection

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We present a single site laparoscopic approach for extended right hemicolectomy in a female patient aged 74 years with a hepatic flexure colon cancer. Extended right hemicolectomy is a challenging laparoscopic procedure, and adequate surgical technique is essential to minimize cancer recurrence. Our principles are to respect the embryological plane between the mesocolon and the prerenal fascia with true central vascular ligation which maximizes the extent of lymphadenectomy. There were vascular variations noted around the gastrocolic trunk of Henle and middle colic vessels in any of the patients. Sometimes, there are not only one but also two or three accessory middle colic veins. We needed to access this complicated area safely.

This video demonstrates our preferred technique for single-site laparoscopic extended right hemicolectomy with a primary vascular approach and radical lymphadenectomy. The video concentrates on the key vascular steps needed to perform a radical lymphadenectomy safely, demonstrating a cranial-to-caudal approach to the root of middle colic artery and vein along gastroepiploic vein, dissection of the right side of the greater omentum, detaching fusion fascia between the omentum and transverse mesocolon, identification of gastroepiploic vein, gastrocolic trunk of Henle, accessory middle colic vein and superior mesenteric vein. Accessory middle colic vein and middle colic vein is ligated and divided at the high level in the order identified. The gastroepiploic vein and gastrocolic trunk are preserved. The root of middle colic artery was identified at the left and cranial side of the root of middle colic vein, followed by dissecting connective tissues around the artery. Then, a medial to lateral dissection of the right retrocolic space along Toldt's fascia. The right colon is mobilized laterally after the vascular supply has been interrupted, according to the principles of the 'no touch' technique.

It is not easy to access these vascular anomalies with single-site laparoscopic technique. This cranial-to-caudal approach is safe and feasible by dividing the accessory middle colic veins, middle colic veins and middle colic artery in order identified, with single-site laparoscopic technique.

V128 - Video - Intestinal, Colorectal and Anal Disorders

Laparoscopic Sigmoid Resection for Recurrent Sigmoid Volvulus

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Background: Sigmoid volvulus is the most common form of volvulus of the gastrointestinal tract, being responsible for 8% of all intestinal obstructions. Surgical resection is required to prevent further recurrence. Laparoscopic sigmoidectomy in a megacolon can be regarded as technically most challenging and there are only a few cases reported.

Aim: We aim to present a video documentation with emphasis in the main surgical steps of an elective resection of a mega-sigmoid due to recurrent volvulus.

Results: Male patient, 58 years old, with a history of laparoscopic cholecystectomy and ventriculoperitoneal shunt for hydrocephalus. He presented twice at the emergency department with abdominal pain and intestinal obstruction. The imaging studies confirmed a volvulus of a mega-sigmoid and the patient was treated with endoscopic decompression. After a CT colonography to detect other lesions, the patient was proposed for an elective laparoscopic sigmoidectomy. Due to the mega-sigmoid, the standard laparoscopic colectomy had to be adapted to increase working space. The surgery and recovery period were uneventful and the patient was discharged on the 4th post-operative day.

Conclusion: Considering that patients with sigmoid volvulus are often elderly and chronically ill, laparoscopic elective surgery after a successful colonoscopic decompression might be a good choice achieving a minimized surgical aggression and faster recovery.

V129 - Video - Intestinal, Colorectal and Anal Disorders

Sphincter Preserving Surgery of a Double Cancer of the Descending Colon and Low Rectum

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Laparoscopic Intersphincteric Resection (Lap-ISR) is a technically demanding surgery for low rectal cancer, and special care should be paid to not only preserving circulation of the intestine but also avoiding tension at the anastomosis. We present a case of low rectal cancer and a synchronous descending colon cancer that underwent simultaneous Lap-ISR and partial descending colectomy.

A 68-year-old male with low rectal cancer was referred to our hospital. A preoperative examination revealed that the rectal cancer was located 4 cm from the anal verge and a synchronous descending colon cancer. According to the UICC 7th Classification, the cancer lesions of the rectum and descending colon were diagnosed as cT2N0, cT2N0. No metastatic lesion was detected. Though we planned a sphincter-preserving surgery using ISR, transection of the marginal vessels of the descending colon was necessary. In order to preserve the arterial blood supply and draining venous flow through the IMV of the isolated segment of the left colon, we preserved the left colic artery and vein and divided the IMA and IMV caudal to the left colic artery. After the TME dissection, rectal wall was transacted with an endolinear stapler at the caudal side of the tumor. The feeding artery for the descending colon cancer was the left branch of the middle colic artery. Opening the bursa omentalis, the splenic flexure was taken down. The specimen of rectum was exteriorized through a 5 cm longitudinal midline incision around the navel. After removal of the rectal cancer, the stump of the rectum was reintroduced into the abdominal cavity, and then tumor lesion of descending colon was exteriorized and transacted followed by a hand-sewn anastomosis. As the distal margin was too close to the tumor of the specimen (5.0 mm) for curative surgery, we transected an additional rectal specimen from the perineal side using the ISR procedure. Finally, colo-anal anastomosis was performed followed by diverting ileostomy. The postoperative course was uneventful, and the patient was discharged on the 23rd postoperative day.

V130 - Video - Intestinal, Colorectal and Anal Disorders

Laparoscopic Right Hemicolectomy with Intracorporeal Anastomosis: How I Do It

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Aims: During the last few years, the laparoscopic right colectomy with intracorporeal ileocolic anastomosis (IIA) has been proposed as an alternative to laparoscopic right colectomy with extracorporeal ileocolic anastomosis (EIA) for the treatment of right colon tumors. The aim of this video is to show the surgical steps of a laparoscopic right hemicolectomy with IIA for right-sided cancer.

Methods: A 70-year-old man underwent colonoscopy for anemia and a neoplasm in the ascending colon was diagnosed. Preoperative work-up ruled out the presence of distant metastases.

Results: Four trocars were used. A medial to lateral approach was followed. After identification and ligation of the ileocolic vessels, the mesocolon dissection started at the origin of the ileocolic vessels, proceeded along the superior mesenteric vein (SMV) in a rostral direction and ended at the origin of the Henle's gastrocolic trunk from the SMV. At this point, right colic vessels were dissected and ligated. Then, the omentum was divided and the hepatic flexure was dissected. Finally, the lateral peritoneal attachments of the right colon were incised to allow medial mobilization of the entire colon. In order to perform an IIA, the proximal transverse colon was transected with a laparoscopic stapler; the terminal ileum was also transected with a laparoscopic stapler and held by the assistant to prevent rotation of its mesentery. The antimesenteric side of the stapled ends of the transverse colon and terminal ileum were approximated by a stay suture tied intracorporeally and then held by the assistant. An antimesenteric enterotomy and an antimesenteric colotomy were made about 10 cm distal to the stapled ends of the transverse colon and terminal ileum, respectively. A side-to-side anastomosis was fashioned with a laparoscopic stapler. The enterotomy after stapler extraction was closed by two layers of reabsorbable sutures tied intracorporeally, and the mesenteric defect was closed. The specimen was delivered through a small Pfannenstiel.

The postoperative course was uneventful and the patient was discharged on postoperative day 5.

Conclusion: Large randomized controlled trials are needed to assess the outcomes after IIA or EIA after laparoscopic right colectomy for right colon tumors.

V131 - Video - Intestinal, Colorectal and Anal Disorders

Early Reconstruction of Colon After Obstructive Resection

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Objective: To show the possibility of improving the results of treatment of patients with pathology of the colon which requires staged surgical treatment by optimizing the time of reconstructive stages.
Materials and Methods: The clinical case of the treatment of the patient M., 46 years old, hospitalized into the surgical Department of KB-2, CJSC Group of companies "Medsi".
Results: The patient was hospitalized after 12 h from the onset of the disease with the clinical picture of the perforation of a hollow organ, of generalized peritonitis. A diagnostic laparoscopy was conducted in the case of emergency. The intraoperative diagnosis was diverticular disease of the sigmoid colon complicated by the diverticulitis, perforated sigmoid colon, generalized purulent-fibrinous peritonitis. A laparoscopic obstructive resection of the sigmoid colon with the formation of the single-sigmoscopy, sanitation and drainage of the abdominal cavity were made. A programmable repair relaparoscopy was made on the third day. Intraoperatively there was a significant regression of inflammatory changes in the visceral and parietal peritoneum. The conservative treatment was continued. The patient was activated 12 h after the surgery. On the 9th day after the relaparoscopy a barium enema was made through sigmostoma. The area of the descending colon affected by the diverticular disease was determined. On the 15th day after the first surgery a laparoscopic reconstructive descendorectal anastomosis with the resection of the diverticular modified distal area of the descending colon, as well as the altered distal area of the sigmoid colon was conducted using colonoscopy navigation. Intraoperatively friable adhesions were revealed at the site of the resected area of intestine, and there were no laparoscopic signs of peritonitis. The total stay in hospital lasted 22 days.
Conclusion: The use of video-endoscopic technologies and complex management of the patient on the Fast Track system allowed to make the reconstruction of the colon 2 weeks after the obstructive resection. The optimizing of the time of reconstructive and recovery stages of surgical treatment of pathology of the colon reqires the scientific support of objective criteria of the readiness of the intestinal tract for reconstruction.

V132 - Video - Intestinal, Colorectal and Anal Disorders

Minimally Invasive Surgery Treatment of Giant Appendiceal Mucocele

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Aims: Appendiceal mucocele is a rare entity characterized by distension of the lumen due to accumulation of a mucoid substance. This disease is often asymptomatic and is usually discovered accidentally or simulating acute appendicitis. Pre-operative diagnosis is rare although if known in advance, correct surgical approach can be planned to avoid rupture and therefore pseudomyxoma peritonei. The aim of this video is to present the laparoscopic approach for a giant appendiceal mucocele diagnosed preoperatively by imaging.
Methods: We present the case of a 51-year-old male who had been diabetic since the age of 23, and was a candidate for simultaneous kidney and pancreas transplantation. In the work-up, imaging showed a large, tubular, cystic structure measuring 8 cm in length and 4 cm in diameter extending below from the inferior wall of the cecum, suggestive of appendiceal mucocele with no signs of intraperitoneal extension. In order to perform a complete lymphadenectomy, a laparoscopic right colectomy was proposed.
Results: Surgery revealed a large appendix and no peritoneal implants were visualized. Two 12 mm ports were placed umbilically and supraumbilically, and additional 5 mm ports were placed suprapubic, right upper and right lower quadrants. The appendix was carefully dissected, avoiding any brisk movements that might rupture it. Dissection was continued from medial to lateral and high ligation of the vessels was performed. Anastomosis was performed extracorporeally through a transverse incision on the right upper quadrant. Surgical time was 70 min. Patient recovered uneventfully and was discharged on the 4th postoperative day. The final pathologic diagnosis confirmed the initial diagnosis of appendiceal mucocele.
Conclusions: Appendiceal mucocele is a rare disease, which can disseminate into a potentially fatal condition if treated incorrectly. For its treatment, minimally invasive surgery is safe and reproducible in expert hands, with good oncologic results.

V133 - Video - Intestinal, Colorectal and Anal Disorders

Complete Local Resection of the T3 Low Rectal Cancer Using Transanal Minimally Invasive Surgery

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With the progress of surgical techniques such as low anterior resection and intersphincteric resection, curative and sphincter preserving surgery can be compatible even for the distal third rectal cancer in recent years. However, full thickness local resection of the distal rectum with sufficient surgical margin is required in some cases, not only for the patients with poor performance status, but also who choose "watch and wait approach" due to problems such as low anterior resection syndrome. We present our novel surgical technique of local resection with sufficient surgical margin for the distal third cT3 rectal cancer using trans-anal minimally invasive surgery.

Case: A 70-year-old male undergoing home oxygen therapy in severe respiratory failure was referred to our hospital for the surgical treatment of low rectal cancer, which was located on the lt. side and 4 cm from the anal verge. Maximum tumor length was 2.0 cm. According to the UICC 7th Classification, the tumor stage was cStageIIA: cT3N0M0. In order to remove the tumor with sufficient surgical margin, trans–anal dissection using trans anal TME (TaTME) technique was available. Firstly, under application of the Lone Star Retractor (Lone Star Medical products), intersphincteric space was dissected cranially about 3 cm through circular incision on the dentate line. The distal stump of the rectum was closed with interrupted 3–0 silk sutures. Second, GelPOINT@Path (Applied Medical Resources Corporation) was applied into the anal canal. Under pneumoperitoneum (8 mmHg), TaTME dissection was performed cranially until the peritoneal reflection was revealed without perforation. Third, opening the rectal stump after pulling down through anal ring, excision of the tumor lesion with sufficient surgical margin was possible under direct vision. Finally, recto-anal anastomosis was performed with interrupted absorbable sutures followed by insertion of trans-anal silicon tube (φ10 mm). Postoperative course was uneventful. Oral intake was permitted after 5th postoperative day after removal of the trans-anal tube and he was discharged 17th postoperative day. Pathological examination revealed that the tumor (pT3) was excised completely with sufficient surgical margin.

V134 - Video - Intestinal, Colorectal and Anal Disorders

Duodenal Window First Approach For Laparoscopic Right Colectomy

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Total laparoscopic right colectomy is a demanding procedure, requiring an adequate laparoscopic training that should be solely evaluated, without left colectomy, owing to technical and anatomical specificities. Some recent studies suggest that the laparoscopic approach (compared to open approach) decreases perioperative morbid-mortality and improves recovery during postoperative course. Also, intracorporeal ileo-colic anastomosis (compared to extracorporeal anastomosis) seems to improve short- and long-term outcomes, mainly major complications. Finally, no difference between in harvest lymph nods stapling has been found between the ileo-colic vessels ligation and the mesenteric root. Owing to these scientific results, the anatomical patterns of the right colon and the oncological requirements, we described a new technique regarding total laparoscopic right colectomy with three 10 mm diameter operative ports, using the duodenal window first approach (presented in a video). Using the duodenal first approach enables to easily identify the right ureter (behind the duodenum), the ileo-cecal pedicle and the right colic pedicle, potentially reducing risk of intraoperative injury and bleeding and, due to the recognized vascularisation, to avoid anastomotic or stump leakage related to ischemia. Considering the anastomosis, it was performed as an intracorporeal ileo-colic isoperistaltic side-to-side anastomosis using a stapler. The specimen placed in a bag was removed using a sus-pubian incision (Pfannenstiel). This new technique of total laparoscopic right colectomy using the "duodenal window" approach is feasible and safe, with good outcomes. The early access to the duodenum and the exposure of ilea-cecal and right colic pedicles rationalizes the procedure.

V135 - Video - Intestinal, Colorectal and Anal Disorders

Successful Restorative Laparoscopic Radical Colproctectomy with D3 Lymph Node Dissection for Descending Colon Cancer in IBD Patient

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Aims: to demonstrate the feasibility of laparoscopic total colproctectomy with D3 lymph node dissection (LND) at the origin of inferior mesenteric artery (IMA) in a patient with ulcerative colitis with adenocarcinoma.

Methods: A male patient aged 61 (ASA 2, BMI 25.4) with a 21 years history of ulcerative colitis was diagnosed with stage III descending colon cancer. In our practice the routine technique for stage III left colon cancer is colectomy with D3 LND at IMA origin. The patient was offered restorative laparoscopic radical colproctectomy with D3 LND at IMA root. Using five ports (camera – umbilicus, iliac area right and left, mesogastrium right and left) the operation started with IMA root skeletonization using ultrasonic dissector (UD), splanchnic sympathetic nerves totally preserved. IMA trunk was divided by UD and D3 LND performed. Dissection continued to splenic flexure, transverse colon and right colon with mesocolic fascia preservation. SMA branches divided by UD 2 cm away from the origin (D2 LND). Left colon and rectum dissected in mesocolic and mesorectal planes. Total mesorectal excision completed and rectum divided by two 45 mm staplers, ileum divided and J-pouch created extracorporeally. Pouch-anal anastomosis created with circular stapler. Protective ileostomy formed.

Results: Operating time was 420 min, blood loss 100 ml, total length of resected colon 180 cm. There were no intraoperative complications. Postoperative ileus resolved in one day. Lymphorrhea up to 250 ml/day was recorded for 6 days, patient discharged on 7th postoperative day. Histological examination revealed descending colon T3 moderately differentiated adenocarcinoma with mucine production, among 76 paracolic lymph nodes (LN) three were metastatic (above tumor and in 5 cm distance proximally), 32 intermediate LN (trunks of left colic, sigmoid and superior rectal arteries) and 6 apical LN (IMA origin) were negative. Ileostomy was closed 6 weeks after. No chemotherapy was prescribed. Three months after surgery the patient has 5 defecations/day with no night episodes.

Conclusions: Extended D3 LND is feasible whilst performing total proctocolectomy for ulcerative colitis with adenocarcinoma enables accurate staging and assures maximal radicality with good functional results.

V136 - Video - Intestinal, Colorectal and Anal Disorders

Short Time Result of Laparoscopic Resection of Adjacent Organ CT4B Colorectal Cancer

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Colorectal cancer often involves adjacent organs, which necessitate the resection of the involved organ. We report our experience of adjacent organ resection, which include seminal vesicle, uterine and bilateral appendages, posterior wall of the vagina and bladder wall.

Method: Although the range of resection is predicted by image study preoperatively, at the time of operation, it was decided by palpation with a forceps. Each operation is evaluated by operation time, blood loss, blood transfusion volume, postoperative complication, postoperative hospital stay, and short term prognosis. Resection cases of seminal vesicle, posterior vaginal wall, uterine and bilateral appendages, and resection of the bladder wall were 5, 3, 2 and 1, respectively. (Result) One case of Bladder wall combined resection was sigmoid colon cancer and all others were rectal cancer. The results are shown in the order of seminal vesicle / vaginal posterior wall / uterine / bladder. Average age was 61, 67, 55 and 74 years old. The average operation time was 542, 679, 596, 249 min, the average blood loss was 455, 303, 610, 10 ml, and only one case of uterine and bilateral appendages resection required the blood transfusion. The average postoperative hospital stay was 45, 45, 31, 15 days. Six cases have postoperative complication, that include delayed wound healing, anastomotic leakage and rectovaginal fistula, anastomotic leakage and rectovesical fistula, postoperative ileus, chyle ascites. All of those were improved with conservative treatment. The mean hospital stay in complication cases was 56 days (38–88) and 20 (14–29) days without complications. The median observation period was 359 days (88–1696), and there was no local recurrence. Except the two case of stage IV, seminal vesicle resection and uterine resection, all cases are in recurrence free survival. Although complications were conservatively improved, 6 patients (55%) was a high rate, which led to an extension of postoperative hospital stay. There was no local recurrence, it seems that the resection range was sufficient.

Conclusion: Even with adjacent organ invasion colorectal cancer, it was possible to determine the resection line by palpation with laparoscopic forceps manipulation, and possible to resect margin free of cancer.

V137 - Video - Intestinal, Colorectal and Anal Disorders

Totally Laparoscopic Right Colectomy for Colon Cancer with Locoregional Disease

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Background: The laparoscopic treatment of locally advanced colon cancer still renders some debate. First of all, the definition of locally advanced disease is not clear, since some authors only consider invasion of adjacent organs. If this might be a more significant prognostic factor, the extension of nodal invasion might bring increased technical difficulty and the need for more conservative pre-operative planning and even impair the laparoscopic approach.

Aim: Our aim is to bring to discussion the laparoscopic resection of right colon cancer with extensive nodal invasion.

Methods: Video presentation of a totally laparoscopic resection of right colon cancer with extensive nodal invasion.

Results: We present the case of a male, 54 years-old patient with a cT3/4N+M0 ascending colon cancer. The patient underwent a totally laparoscopic right colectomy achieving a R0 resection with 20 nodes invaded out of 34 lymph resected. The recovery was uneventful.

Conclusion: In the presence of a locally advanced disease, laparoscopic approach can be considered, assuring R0 resection and the principle of an oncological resection. However, long-term survival analysis are required to assure the effectiveness of this approach in the treatment of loco-regional advanced disease.

V138 - Video - Intestinal, Colorectal and Anal Disorders

Usefulness of Intraoperative ICG Blood Flow Evaluation of Colonic Stumps in Laparoscopic Sigmoidectomy

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ICG blood flow evaluation of colonic stump can be useful to decide the level of anastomoses in order to reduce postoperative anastomotic leakage. In this video we present the technique of intraoperative ICG blood flow evaluation of the colonic stump in a case of sigmoid cancer. Conventional laparoscopic sigmoidectomy was performed. The ICG blood flow evaluation is performed and anastomoses visualized achieving a complete, not patched anastomosis.. This study can be used in doubtful situations and doesn't represent a significant increase of operative time.

V139 - Video - Intestinal, Colorectal and Anal Disorders

In Block Laparoscopic Resection of T4 Sigmoid Colon Neoplasia with Invasion and Vesical Fistulization

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Laparoscopic resection in patients with colorectal cancer T4 is still a controversial issue. In many settings, it is considered a laparoscopic exclusion criteria. However, lately several publications have shown that laparoscopic multivisceral in block resection is feasible, with adequate short-term results. We present a in block resection video of a sigmoid colon neoplasm with invasion and bladder fistulization, with retraction of the urinary bladder, in a patient of 71 years. Successful complete laparoscopic block resection was successfully performed. Technical, oncologic details and our experience in laparoscopic resection in T4 tumors in the last 10 years are commented.

V140 - Video - Intestinal, Colorectal and Anal Disorders

Laparoscopic Parietal Peritonectomy and Hyperthermic Intraperitoneal Chemotherapy for Colon Cancer Peritoneal Metastasis

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Background: Surgical intervention for patients with colon cancer peritoneal metastasis consists of a cytoreductive surgery and hyperthermic intraperitoneal chemotherapy (HIPEC). Because of its technical complexity, laparoscopic approach has been rarely reported. In this video, we aimed to show our technique of laparoscopic left hemicolectomy, partial parietal peritonectomy on the Douglas pouch and both flank, greater omentectomy, and hyperthermic intraperitoneal chemotherapy for a patient with primary colon cancer with synchronous peritoneal metastasis.

Methods: A 59-year-old man came to the emergency room with abdominal pain and computed tomography revealed complete colonic obstruction from a splenic flexure colon cancer without any distant metastasis. He received colonoscopic intervention with a stent insertion as a bridge. He underwent a laparoscopic left hemicolectomy for a descending colon cancer. During the laparoscopic exploration, we incidentally found peritoneal metastatic nodules on the Douglas pouch, both paracolic gutter, greater omentum, and small bowel mesentery (peritoneal cancer index 13). The procedure was performed using five ports, an 11 mm camera port at the umbilicus and four working ports. Douglas peritoneum was freed from retroperitoneum, using electrocautery. One of the nodules invading the rectal wall was removed by a wedge resection of the upper rectum using a laparoscopic linear stapler. Parietal peritoneum on the both flank was stripped away from the abdominal wall. After the left hemicolectomy and greater omentectomy, all specimens were retrieved through the mini-laparotomy and small bowel was extracted through it for fulguration of the small bowel mesentery nodules. At the end of the operation, hyperthermic intraperitoneal chemotherapy using mitomycin C at a dose of 35 mg/m^2 was provided for 90 min.

Results: The operation took about 380 min (skin to skin) and the estimated intraoperative blood loss was approximately 50 ml. There was no intraoperative complication, and transfusion was not necessary during perioperative period. The final pathology confirmed T4aN2aM1b. On postoperative day 5, the patient recovered with no problems, and started the oral intake. The patient was discharged on postoperative day 14 without any postoperative morbidity.

Conclusion: In a highly selected patient, colon cancer peritoneal metastasis can be managed safely with a minimally invasive approach.

V141 - Video - Intestinal, Colorectal and Anal Disorders

ICG-Guided Laparoscopic D3 Lymphadenectomy For Right-Sided Colon Cancer

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Background: Surgical resection of the lymph nodes (located around the root of the feeding artery) is a key part of D3 lymphadenectomy and central vascular ligation for colon cancer surgery. The D3 lymph nodes (main lymph nodes) of right-sided colon cancer are positioned on the ventral side of the SMV and SMA. Under the white light, however, it is challenging to identify the boundary of the D3 lymph nodes. We used ICG (indocyanine green) to guide the territory of D3 lymphadnectomy during laparoscopic resection of right-sided colon cancer.

Methods: From June 2016 to November 2016, 12 patients underwent ICG-guided laparoscopic right hemicolectomy with D3 lymphadenectomy after completing the informed consent form. We performed endoscopic injection of ICG (total amount: 0.2–0.3 ml; 2.5 mg/ml) into the submucosal layer of the tumor or peritumoral lesion on one day before surgery. Colon mobilization was performed along the embryologic planes followed by D3 lymphadenectomy and central vessel ligation. During D3 lymphadenectomy, all fluorescing lymph nodes along the SMV or SMA were dissected.

Results: The injection of ICG in the submucosal layer and real-time identification of the D3 lymph nodes during surgery was successful in all patients without any complications. The fluorescing lymph nodes were found along the SMV in all patients. The median number of total harvested lymph nodes in all patients was 35 (range, 22–76). When the regional lymph nodes were classified according to location, the median numbers of lymph nodes are as follows: 19 (range, 12–33) for D1 (pericolic) lymph node; 7 (range 0–17) for D2 (intermediate) lymph node; 9 (range 5–34) for D3 lymph nodes. No patients had pathologically metastatic lymph nodes.

Conclusion: ICG-enhanced real-time fluorescence imaging is an easy and safe technique to identify D3 lymph nodes of right-sided colon cancer. This technique can guide the territory of D3 lymphadenectomy during laparoscopic resection of right-sided colon cancer.

V142 - Video - Liver and Biliary Tract Surgery

Solo Single Incision Laparoscopic Left Hemihepatectomy Using a Laparoscopic Scope Holder

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Background: Laparoscopic major hepatectomy through a single incision is difficult with limited activity ranges between an operator and assistants, instrument collision, unstable camera view. In this video, we introduced the solo single incision laparoscopic left hemihepatectomy using a laparoscopic passive scope holder. This solo hepatectomy using a single incision provides us a wide range of activity, collision between a camera and laparoscopic instruments and stable surgical views.

Video contents: A patient was in supine position with the legs split apart. An operator was between patients' legs during operation. A laparoscopic scope holder was positioned on the left side of the patient. A 10 mm flexible laparoscopic camera was fixed using a jaw of a camera holder. It provided the stable laparoscopic surgical views. A 2.5 cm sized single incision through an umbilicus was made. After ligating cystic artery and cystic duct, the liver was retracted to the right side. After ligating left hepatic artery and left portal vein, the liver ischemic line was marked on the liver surface. Without pringle's maneuver, superficial parenchymal dissection was dissected with an energy device and deep part of the liver was dissected with a CUSA. During performing left hepatectomy, left the side of the middle hepatic vein was exposure and saved. Left bile duct isolated under the blunt dissection, it was identified and resected. At the conjoint point between the middle hepatic vein and left hepatic vein, left hepatic vein was ligated and resected. A specimen with a gallbladder was removed though the umbilical wound.

This operation took 165 min and estimated blood loss was 300 mL. The patient was discharged 3 days after the operation without a postoperative complication. Biliary intraepithelial neoplasia (grade 2) with 1.3 cm resection margin was reported.

V143 - Video - Liver and Biliary Tract Surgery

Single-Incision Laparoscopic Right-Hemicolectomy with Complete Mesocolic Excision and Central Vascular Ligation for Colon Cancer

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Aims: The applicability of single-incision laparoscopic right-hemicolectomy with Complete mesocolic excision (CME) and central vascular ligation (CVL) for colon cancer are poorly understood in terms of clinical and oncological outcomes. Our surgical procedure of single-incision laparoscopic right-hemicolectomy with CME and CVL are presented, and its outcomes are evaluated.

Methods: 79 patients (40 women) with a median age of 73.4 year were treated with this procedure for clinically diagnosed stage II-IV colon cancer in Fukui prefectural hospital. *Surgical procedure*. First, a Lap protector (LP; Hakkou Shoji, Japan) was inserted through a 2.5 cm transumbilical incision and an EZ-access (Hakkou Shoji, Japan) with three ports was mounted. The ileocolic vessels are mobilized from the subperitoneal fascia leading to the duodenum. After dissection of lymph nodes bearing areolar tissue on the SMV, the origin of ileocolic vessels was exposed and then clipped and divided. Careful dissection along the SMV was continued to the level of the root of the mid-colic artery. After removing lymph node-bearing tissue around the origin of mid-colic artery root, the right branch was clipped and divided. A dissection around the gastrocolic trunk was performed, and middle colic vein was ligated. The peritoneum is incised along the base of the ileal mesentery upward to the duodenum. This plane is connected to the previous dissected plane and the right colon are detached. Finally, the hepatic flexure is detached to mobilize the entire right colon.

Results: Of these 79 patients, 3 patients (3.8%) were converted to laparotomy. The mean skin incision length was 2.65 cm. The mean number of harvested lymph nodes was 33.0. Postoperative complications were occurred in 3 patients. The 3-year relapse-free survival rates of patients with Stage I, Stage II and Stage III were 100%, 96.7% and 77.8%, respectively, and the 3-year overall survival rates of patients with Stage I, Stage II, Stage III and Stage IV were 100%, 96.7%, 100.0% and 71.4%, respectively.

Conclusions: Our initial experiences showed that single-incision laparoscopic right hemicolectomy with CME with CVL can be applied to the treatment of right colon cancer with good outcomes in suitable patients.

V144 - Video - Liver and Biliary Tract Surgery

Laparoscopic Left Hepatectomy for Mucinous Cystic Neoplasm of the Liver

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Aims: among liver cystic lesions, mucinous cystic neoplasm of the liver (MCN-L) constitutes a challenge issue in terms of management: preoperative diagnosis is often unachievable and this may mislead to the wrong choice of treatment. We present the case of an otherwise healthy 29 year-old female who underwent in another institution laparotomic hepatic cyst unroofing in segment 4 and cholecystectomy: post operative course was complicated by a biliary leakage, endoscopically treated. Short term follow up showed early recurrence with a volumetric enlargement of the cyst occupying most of the left hepatic lobe and a new satellite cyst in Sg5. The doubt of MCN-L arose, and the patient was scheduled for a laparoscopic removal at our Centre despite the previous laparotomic procedure.

Methods: an optic port was placed into right upper abdominal quadrant and 3 further ports were placed under direct vision. A long and difficult adhesiolysis was performed and a Pringle's manoeuver was settled. Intraoperative US confirmed the anatomic limits of the cysts in Sg5 and in the left hepatic lobe. The cyst on Sg5 was first resected and frozen section was suspicious for MCN-L. In order to prevent a recurrence, a left laparoscopic hepatectomy was performed. The specimen was extracted through previous midline laparotomy.

Results: postoperative course was uneventful and the patient was discharged on POD 5. Pathology and immunochemistry confirmed the diagnosis of MCN-L.

Conclusion: hepatic cystic lesions may be insidious and preoperative biopsy is not always possible due to lack of solid tissue. In unclear settings, an intraoperative frozen section is mandatory to guide intraoperative decisions. In the suspicion of malignancy, resection with oncologic criteria must be chosen as the most appropriate treatment, as well as the retrieving of MCN-L requires formal hepatic resection to avoid early recurrence. Despite of previous laparotomy, we consider a laparoscopic approach could be attempted, in selected cases, in institution with particular expertise in laparoscopic liver surgery.

V145 - Video - Liver and Biliary Tract Surgery

Laparoscopic Segment 7 Resection For Prostate Cancer Liver Metastasis

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Aims: worldwide, prostate cancer is considered the second most common cancer in men. Most common sites for metastatic disease are lymph nodes and bones. However, liver metastasis from prostate cancer is rare. Laparoscopic liver resection of postero-superior segments is more demanding and dangerous than other segmentectomies, resulting in a longer operation time and increased blood loss. To reduce technical challenges, some authors advocated a modified surgical approach for these segments with the patient placed in the left lateral decubitus with the right arm suspended and suggested technical variations like the use of an additional intercostal trocar, the placement of one or two additional trans-thoracic trocars, a hand-assisted approach or a hybrid method with a median laparotomy. We present the case of an otherwise healthy 67 year-old male who underwent, in 2013, to radical prostatectomy and bilateral pelvic lymphadenectomy for pT3, pN1, G3 prostate cancer, followed by hormone therapy and radiotherapy. He presented, in 2014, pulmonary and segment 7 liver metastatic recurrence, treated by chemotherapy. In April 2016 the pulmonary metastasis was thoracoscopically resected. Thus, the patient was scheduled for a laparoscopic resection at our Centre.

Methods: the patient was placed in a standard lithotomic position, an optic port was inserted into right upper abdominal quadrant and 3 further ports were introduced under direct vision; the Pringle's manoeuver was settled. Intraoperative US confirmed the anatomic limits of the lesion in Sg7. A laparoscopic segmentectomy was performed. The specimen was extracted through previous midline incision.

Results: postoperative course was uneventful and the patient was discharged on POD 5. Pathology confirmed the diagnosis of hepatic metastasis from prostate cancer.

Conclusion: laparoscopic resection of liver tumors located in the postero-lateral segments of the liver is technically feasible and safe. In our opinion, a total abdominal approach with a standard lithotomic position is technically feasible and safe. It allows a more comfortable use of the Pringle maneuver. Furthermore, the surgeon is more confident with the surgical field and vision, minimizing the risk of complication related to different approaches and with the possibility of a more rapid and simple conversion to open surgery whenever needed.

V146 - Video - Liver and Biliary Tract Surgery

Laparoscopic Parenchymal-Sparing Anatomical Liver Resection Using Vein-Guided Approach for Tumors Located in the Posterosuperior segments of the Liver

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Aims: Liver tumors located in the posterior or superior (PS) part of the liver have been considered poor candidates for laparoscopic hepatectomy. We report a new concept for laparoscopic partial liver resection, a laparoscopic parenchyma-sparing anatomical liver resection (LaPSAR) using vein-guided approach for tumors located in the PS segments.

Methods:

Decision of the resection region: The 3rd–5th glissonian branches were chosen to wrap up a tumor according to 3D-image simulation.

Surgery planning: The veins that appear on the transection plane were identified as guide for transection and the order of following these veins was decided from the beginning to the end of liver transection.

Surgery: Liver transection started on the liver surface near a branch of the guide vein. Transection proceeded along the branch, then reached the guide vein. Transection went down along the guide vein which ran near the corresponding Glisson's pedicles. The pedicles were dissected one by one, then the guide veins were sequentially followed to keep a precise transection plane. Laparoscope-specific surgical view and caudal approach enables us to recognize the fine vessels and to dissect in any direction which is difficult to perform in open surgery.

Results: The patient in the video is a 78-year-old man who was diagnosed with HCC, with the tumor located deep in segment 8. The operative time was 260 min. Estimated blood loss was 5 ml. The patient's postoperative course was uneventful. Histological examination of resected specimens revealed curative status with clear margins.

Conclusion: LaPSAR using vein-guided approach is useful for resection of tumors located in the PS segments of the liver.

V147 - Video - Liver and Biliary Tract Surgery

Liver Parenchymal Dissection With Pre-coagulation Dissection Technique for Laparoscopic Hepatectomy

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Introduction: With the development of surgical devices and technique, laparoscopic liver resection (Lap-LR) has been rapidly expanded the indication and is currently much safer procedure than the initial period, but we still encounter the risky situations during the operation, one of which is intraoperative bleeding. We developed the technique to reduce the intraoperative bleeding during the parenchymal dissection in Lap-LR with pre-coagulation using VIO system followed by parenchymal crushing using CUSA so called "pre-coagulated dissection technique (PCD technique)". Here we introduce this technique in video and report the results.

Methods: Seventy-five Lap-LRs using PCD technique were performed in our institute from June 2011 to December 2016. The original disease was HCC in 29, metastatic tumor in 38, and benign tumor in 8 cases. The detail of PCD technique was as follows; 1st assistant coagulated the liver parenchyma before dissection using VIO system (soft coagulation mode, power 60 W, effect 5) and the operator crushed this pre-coagulated parenchyma using CUSA. Remaining vasculatures including glissonian and hepatic vein were dissected and cut using various techniques according to the size.

Results: Lap-LR consisted of pure laparoscopic resection in 54 and hand assisted laparoscopic resection in 15 cases. Six cases in the early period were converted to open hepatectomy. Operation mode was partial hepatectomy in 52, segmentectomy in 20, and lobectomy in 3 cases. Operation time (median) was 48–534 (274) min. Intraoperative bleeding (median) was 0–642 (0) ml and blood transfusion was done in one case with liver cirrhosis (1.3%). In terms of the postoperative course, the postoperative complication of Clavian-Dindo classification Grade IIIa occurred in 2 cases (2.6%), which included a case of bile leak from the cutting surface and a case of cerebral infarction. All 75 patients discharged from the hospital and the hospital stay after surgery was 1–21 days (median: 7).

Conclusions: The pre-coagulated dissection technique could be conducted with little intraoperative bleeding and lower incidence of post-operative severe complications. This technique is an effective method to maintain the safety in Lap-LR.

V148 - Video - Liver and Biliary Tract Surgery

Laparoscopic Resection of Liver Hydatid Segment VII

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Aim: Laparoscopic resection of liver hydatid segment VII.

Methods: The video will show the steps used to identify the Hydatid at segment VII using 5 trocars, dissection of the cyst from the Right diaphragm with iatrogenic perforation of the Right diaphragm that was closed by intracorpeal suturing and the steps used for resection of the Hydatid cyst after treating with citramide and also suturing the biliary fistula that was noted in the Liver bed.

Results: Patient had smooth post operative course and discharged from hospital within 24 h.

V149 - Video - Liver and Biliary Tract Surgery

Thoracoscopic Hand-Sewn Anastomosis for Minimal Access Ivor-Lewis Oesophagectomy

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Aims: One of the main challenges in an Ivor-Lewis Minimally Access Oesophagectomy (MAO) is the performance of oesophago-gastric anastomosis. This video aims to demostrares safe and reproducible way of performing thoracoscopic hand-sewn anastomosis.

Methods: Abdominal part of the operation and gastric tuberisation is completed laparosocpically. The patient is then positioned prone and the operating table is 'broken' at the level of scapular tip. Optical port is placed in the 5th inter-costal space (ICS) posterior to the scapular angle and working ports in 2nd and 7th ICS. Thoracic oesophagus is mobilised and divided at the level of the azygous arch and the gastric tube is pulled into the chest.

Three 3/0 barbed 15 cm long sutures (V-Loc^{TM}-Medtronic) are used. The stapled end of the oesophagus is sutured to the anterior surface of the gastric tube. This helps to stabilise the site of the anastomosis and acts both as a stay and forming the anterior margin of the anastomosis. Both the oesophagus and the gastric tube are then opened using 'hook' scissors. A continuos suture is then commenced at mid point of this suture line suturing oesophagus and the gastric tube using a second 3/0 V-Loc suture running along posteriorly. A third suture is then started at the mid point running anteriorly. Both of these sutures are then taken around the corners and finished on the right hand side of the anastomosis. Oesophageal mucosa is included in all the sutures. The anastomosis is then tested with methylene blue leak test.

Results: This technique has been used in 20 consecutive MAOs. There was one subclinical leak, this patient had positive margins. There was one patient presented with an early stricture which needed only one endoscopic dilatation.

Conclusions: Thoracoscopic hand-sewn anastomosis is a safe and reliable way of constructing the oesophagogastric anastomosis during MAO. This technique overcomes the problems associated with both circular and linear stapler techniques.

V150 - Video - Liver and Biliary Tract Surgery

ICG Fluorescence Guided Atypical Segment VI Laparoscopic Liver Resection for Colorectal Metastasis

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Aims: mapping of a liver metastasis is useful during atypical hepatic resection. Visualization of hepatic lesions by using indocyanine green (ICG) enhanced fluorescence imaging has been reported. This video shows our technique to perform a segment VI resection for colorectal cancer metastasis with ICG enhanced fluorescence technology.

Methods: 54-years-old female underwent laparoscopic low anterior rectal resection for a pT3pN1G2 adenocarcinoma. She received adjuvant chemotherapy. Three years after surgery a CT scan detected one single 4 cm metastasis at hepatic segment VI; this was confirmed by MRI. The patient was scheduled for a laparoscopic atypical liver segmentectomy, she was placed in semilateral position with the right side elevated 30°. Five trocars are introduced in the upper quadrants; a diagnostic and staging laparoscopy is performed and the liver is examined using laparoscopic ultrasonography confirming one single metastasis. ICG was injected intravenously 48 h before surgery to allow normal liver parenchyma to wash out most of the dye, while some ICG is retained from the normal cells around metastatic lesion, that will appear fluorescent. The result is a "bright-circle image" around the lesion, that we have used to guide surgical resection. Liver resection was carried out using an advanced harmonic scalpel combining bipolar force, preparing the hilum for Pringle maneuver, that was unnecessary. Near infrared (NIR) camera with dedicated light source and scope were used (Karl Storz GmbH, Germany) in order to detect ICG mediated fluorescence. Switching from white light to NIR light allows the surgeon to identify the clear plane of resection.At the end of procedure liver surface was checked with fluorescence imaging to detect biliary leaks.Hemostasis was optimized with application of hemostatic advanced device and a drain was left in place.

Results: The postoperative course was uneventful and the patient was discharged on postoperative day 4. Histopathological examination showed a 4.7 cm adenocarcinoma G2 metastasis with negative margins (>5 mm). The patient received adjuvant chemotherapy and at 6 months after surgery, she has no disease recurrence.

Conclusion: ICG may represent a real-time, safe and effective technique for visualization of metastatic hepatic lesions. This could be particularly important during non-anatomic resections.

V151 - Video - Liver and Biliary Tract Surgery

Laparoscopic Repair of Postcholecystectomy Bile Duct Injury

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Aims: Despite widespread advances in laparoscopic surgery, laparoscopic repair of post-cholecystectomy bile duct injury (BDI) has rarely been reported. We describe 3 cases of BDI treated laparoscopically with one illustrated by video.

Methods: With our extensive experience in laparoscopic pancreaticoduodenectomy, we decided to perform laparoscopic repair of selected patients with BDI since 2014, mainly in patients with an intact biliary confluence and without vascular injury. We illustrate our experience in this video.

Results: Laparoscopic repair was performed safely without transfusion and with uneventful postoperative course. After a follow up of 23 months the patient is symptom free with normal liver function tests.

Conclusion: The laparoscopic approach can be safely and effectively proposed to a subgroup of patients with bile duct injury. This approach has the advantages of the laparoscopic approach and represents the main surgical advancement in the management of this complication in many years.

V152 - Video - Liver and Biliary Tract Surgery

Laparoscopic Central Pancreatectomy for IPMN

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A young female with branch duct IMPN underwent laparoscopic central pancreatectomy with pancreatico-gastric anastomosis with uneventful course. In this video our surgical technique is illustrated.

V153 - Video - Liver and Biliary Tract Surgery

Laparoscopic Radical Cholecystectomy for Gall Bladder Cancer

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Aims: to evaluate feasibility and safety of laparoscopic cholecystectomy for early gall bladder cancer.

Methods: Patients with gall bladder cancer and receiving laparoscopic radical cholecystectomy, including regional lymph node dissection (group 8, 12 and 13) and partial hepatectomy (S4b and S5) had been collected from a prospectively established database of 694 laparoscopic liver resections. Perioperative outcome and follow-up data were analyzed.

Results: Total 6 patients have been collected, including 1 male and 5 females. The pathology stage included pT2N0Mb in 3, pT2N1Mb in 2 and pT3N0Mb in 1. The mean age is 44 years (34 ~ 76). Mean operation time is 315 min (285 ~ 435). All procedures had been completed by pure laparoscopic approach without open conversion. No patient in this group received blood transfusion. R0 resection had been achieved in all patients. Mean hospital stay after surgery was 9.4 days (5 ~ 27). One patient with prior abdominal surgery history experienced prolonged ileus which needed subsequent adhesiolysis. No wound complication, bile leakage and intraabdominal abscess had been found in this group. Until recently, no patient developed tumor recurrence at mean follow-up of 14 months.

Conclusion(s): Laparoscopic radical cholecystectomy is feasible and safe with acceptable short term outcome in patients with early gall bladder cancer. However, careful patient selection is mandatory. Further large scale studies are highly expected to clarify the efficacy and benefits.

V154 - Video - Liver and Biliary Tract Surgery

Laparoscopic Microwave Liver Ablation and Portal Vein Ligation. AN Alternative Approach to Conventional ALPPS Procedure in Hilar Cholangiocarcinoma

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Introduction: Associating liver partition and portal vein ligation for staged hepatectomy (ALPPS) is new procedure aimed at promoting overgrowth of small future liver remnants (FLR). In hilar cholangiocarcinoma (h-CCA) ALPPS entails high morbidity and mortality, since cholestasis and the need for preoperative biliary drainage (PBD) increase the risk of bile leak and infection.To circumvent these difficulties in situ splitting of the liver was replaced by microwave ablation(MWA) of liver parenchyma.

Methods: A 64-year-old woman with a type IIIA h-CCA and bilateral PBD had a small FLR (FLR/body weight: 0.47 cm3/kg). She was planned for laparoscopic step 1 ALPPS using MWA. Because of h-CCA and separate origin of the right paramedian and the right lateral branches of the portal vein, robotic assistance was preferred to conventional laparoscopy for step 1 ALPPS.

Results: The patient recovered promptly and the size of FLR was increased by 68% by post-operative day (POD) 10 (FLR/body weight of 0.79 cm3/kg). On POD 15 she underwent bloodless open right hepatectomy with en-bloc resection of caudate lobe, bile duct bifurcation, and extrahepatic biliary duct. Chemotherapy was started on 6 weeks later and was tolerated well. One year after resection the patient is alive, well, and disease free.

Conclusion: In cholestatic livers requiring PBD, coupling laparoscopic portal vein ligation with MWA of liver parenchyma could be rewarding, where open ALPPS is associated with prohibitive morbidity and mortality. We preferred, for the step 2, an open approach because of tumor type and need to pursue a radical lymphadenectomy.

V155 - Video - Liver and Biliary Tract Surgery

Laparoscopic Left Hepatectomy: Technical Details

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Aim: Despite the absence of available randomized controlled trials, meta-analyses from comparative studies have shown that laparoscopic left hepatectomy is associated with reduced morbidity, blood loss and shorter hospital stay compared to open controls and without difference in terms of oncological outcomes. We aim to describe with this didactic video the procedure of totally laparoscopic left hepatectomy.

Method: The patient is a 24 years old female with a suspicious liver segment IV lesion (32 mm) with a left sectoral biliary dilatation. The MRI shows the relationship of the lesion and the segment IV pedicule. A laparoscopic left hepatectomy was proposed. The patient was placed in a supine position, the surgeon between the legs. We used with five upper abdominal ports: three 12-mm ports and two 5-mm ports. We began dissection of the left hepatic pedicle, first identifying and dividing the left hepatic artery between locking clips (Hem-o-loks). The next step consisted of dissection and division of the left portal vein. Laparoscopic ultrasonography was used confirming that the origin of the LPV was free of tumor (not shown). A tape was passed around the portal triad and a tourniquet was prepared for Pringle maneuver. Liver transection was performed with a combined energy device (Thunderbeat) complemented with bipolar cautery. Branches of the middle hepatic vein were controlled and divided. The next step was the dissection and division of the left bile duct. The duct was divided with scissors and presented a suspicious biliary thrombus. The remnant biliary stump was closed using a clip Hem-o-lok. The rest of the transection was completed up to visualization of the left hepatic vein which was finally divided with a linear stapler. After completion of the hepatic parenchymal transection, a supra-pubic incision was made and the specimen was extracted in a bag. A tubular closed suction drain was placed near the remnant liver.

Results: This surgical procedure lasted 240 min with minimal blood loss. After an uneventful postoperative course, the patient was discharged at postoperative day 3. No complication occurred troughout the 90 days after surgery. Pathology confirmed a R0 resection of a non-malignant mucinous cystic neoplasia.

V156 - Video - Liver and Biliary Tract Surgery

A 'JACK in the BOX' During Laparoscopic Treatment of Common Biliary Duct Stones in Patients with Previous Cholecystectomy

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Introduction: There is still an open debate on biliary tree calculosis after cholecystectomy and the possible etiologies of recurrent lithiasis. In 1897, Homan first described how suture material could be a nidus for the formation of biliary stones. Since then, many authors have reported similar cases, with nonabsorbable sutures.

Material and Methods: Aim of this study is to present the case of a 76 years old female patient admitted to the emergency room for cholangitis and jaundice due to choledocolithiasis. Years earlier, the patient underwent laparotomic cholecystectomy for cholelithiasis.

Results: The patient was assessed with US and MRCP that showed the presence of an impacted stone in the main biliary duct. Endoscopists failed to retrieve the stones through a sphincterotomy. The patient was then brought to the operating theatre for laparoscopic surgery. Laparoscopic choledocotomy allowed extraction of multiple impacted stones, by milking, washing and balloon maneuvers. During such maneuvers a large stone was found, which at a careful look, included a reabsorbable suture thread. The procedure was integrated by a choledocoscopy and an echolaparoscopy in order to assess definite and complete clearing of the biliary tree. The only reasonable hypothesis was that the suture previously positioned as a lace on the cystic duct during cholecystectomy could have represented a nidus for stone formation.

Conclusions: This finding raises, once again, the curtain on recurrent vs. residual calculosis in cholecistectomized patients.

V157 - Video - Liver and Biliary Tract Surgery

Laparoscopic Left Hepatectomy with Extraglissonian Approach, Hanging Maneuver and Resection of Middle Hepatic Vein

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We present the case of a 54 years-old woman who was operated due to a 75 mm cystic tumor located in segment IVa, just in th root between both middle and left hepatic vein. It was planned a laparoscopic left hepatectomy with resection of the middle hepatic vein. In the video is presented step-by-step: movilization of the lateral segment of the liver; dissection of both middle and left hepatic veins in block; dissection and division of the left hepatic pedicle by extraglissonian approach; division of the hepatic parenchyma using the hanging maneuver for that purpose; after leaving hepatic veins isolated, they are divided with endostappler. Four trocar were used for doing all the procedure. The patient recovered well without any complication and was discharged on 4th postoperative day.

V158 - Video - Liver and Biliary Tract Surgery

Laparoscopic Common Bile Duct Exploration After Failed Endoscopic Retrograde Cholangiopancreatography - An Unexpected Stent Complication

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Aims: Laparoscopic exploration of the common bile duct (CBD) is an established treatment option for CBD stones but is now less frequently performed than during the open cholecystectomy era. More reliance is placed upon Endoscopic Retrograde CholangioPancreatography (ERCP) but if this option fails then laparoscopic exploration may be required. This video demonstrates a case where 2×ERCPs failed to clear the duct and a pigtail stent had been left in situ. The case demonstrates an unexpected cause of stent blockage and intra-operative challenges for the surgeon.

Methods: The patient was a 56 year old male. After standard laparoscopic port placement and routine cholecystectomy, on-table cholangiogram demonstrated 3–4 large stones in the common bile duct and a stent through which no contrast was seen to pass, indicating total blockage. Contrast did pass into the duodenum by what appeared to be an accessory duct. An unusual swelling seen on the medial aspect of the common hepatic duct was shown at choledochotomy to be the proximal end of the stent firmly occluded into the bile duct wall, clearly at risk of delayed iatrogenic perforation. The stent and four stones were removed and on subsequent choledochoscopy the bile ducts were confirmed free of stones. The duct was closed satisfactorily with continuous vicryl and a drain left in situ for 48 h.

Results: The patient made a good post-operative recovery with no bile leak evident from the drain. This was removed after 48 h and the patient was discharged home.

Conclusions: Laparoscopic CBD exploration is a useful surgical option when ERCP has failed and avoids the recognised morbidity of open exploration. It is offered in few centres; with training opportunities rare this video may be helpful as a training aid. It demonstrates a potential complication of stent insertion and some intra-operative difficulties, and describes some of the techniques involved in this operation.

V159 - Video - Liver and Biliary Tract Surgery

The Initial Experience of Robotic Single Incision Hepatectomy on the Left Lateral Segment of Liver

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Introduction: Single incision laparoscopic hepatectomy (SILH) has been performed on the inferior portion or left lateral segmentectomy of the liver. However, the use of robotics in liver surgery has been rarely reported. We report our initial experience in four patients on SILH left lateral segment by using the Robotics Surgical System. TECHNIQUE: A 3–4 cm skin incision is performed on the umbilicus and a single-incision platform with multi-access is introduced. Operation began with ultrasound examination to define the location of the tumor and resection line of the liver. Liver parenchyma is transected with Robotic harmonic scalpel and bipolar cauterization. In left lateral segmentectomy, vascular endoscopic stapler is used to divide segments 2 and 3 Glissonian pedicle and left hepatic vein is divided with stapler also. Specimen is retrieved through the single umbilical incision. The umbilical wound was closed without any drain.

Results: From November 2015 to December 2012, the liver resection was successfully completed for four patients. The procedures consisted of one partial resections of segment 2, three-left lateral segmentectomies. The mean operative time was 120 min in partial resection, 150, 120 and 150 min in left lateral segmentectomy. The estimated blood loss was 100 ml in partial resection, 50, 190 and 200 mi in left lateral segmentectomy. The postoperative courses were uneventful and all discharged on the postoperative 5th day.

Conclusion: Robotic SILH of liver is a feasible technique and safe approach for wedge resection or left lateral segmtectomy without oncological compromise and with favor cosmetic results. This surgical technique will requires relatively advanced laparoscopic skills as in SILH.

V160 - Video - Liver and Biliary Tract Surgery

'Ultra' Mini-invasive Laparoscopic Cholecystectomy Using Reusable Percutaneous Instruments and Intraoperative Fluorescence with Indocyanine Green

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Introduction: Indocyanine green (ICG) fluorescence imaging is emerging as new techonological tool to support intraoperative decision making during surgical procedures. At the same way reduced-port laparoscopy represents an evolving and attractive field to reduce post-operative pain and obtain better cosmetical results.

Aim: This video shows our technique performing "ultra" mini-invasive cholecystectomy using reusable 2.9 mm percutaneous instruments and ICG intraoperative fluorescence imaging to clarify biliary anatomy identification.

Methods: A 45 years- old patients was scheduled for elective laparoscopic cholecystectomy for symptomatic cholelitiasis. After the introduction of the first 10 mm optical trocar at the level of umbilicus, percutaneous instruments (Teleflex Medical, US) are directly inserted under direct vision in the abdominal cavity without using any trocar and then assembled outside the abdomen with standard 5 mm interchangeable end-effectors (forceps, scissors, monopolar hook, clip-applicator). The operation follows the standard steps of laparoscopic cholecystectomy: dissection of the upper part of Calot's space in order to achieve the "critical view of safety"; identification and isolation of cystic duct and artery with intraoperative cholangiography using ICG-enhanced fluorescence (Karl Storz, Tuttlingen, Germany), clip placement with percutaneous instruments and artery and cystic duct section.

Results: Percutaneous approach seems to be a safe and feasible alternative to standard laparoscopic surgery, offering better cosmetic results and good pain control. ICG-enhanced laparoscopic surgery can be applied during mini-invasive cholecystectomy offering to the surgeon additional information on biliary anatomy.

V161 - Video - Liver and Biliary Tract Surgery

Laparoscopic Management of Right Hepatic Vein Injury

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Introduction: Laparoscopic Liver Resection (LLR) has now been widely performed in experienced centers. One of the worse complications during this surgery, is the hepatic vein injury, because it may cause conversion, air embolization, fatal hemorraging, or even death.

Material and Methods: We present the surgery of a 70 years old male, with a previous history of colon cancer, who develops Liver Metastases in the right Lobe, one of the lesions is situated close to the origin of the right hepatic vein. The patient is proposed to surgery, he underwent laparoscopic Right Hepatectomy, during the surgery the Right Hepatic Vein is injured, which cause important bleeding, in the video we can observe how to gain temporary control of the bleeding and proceed to a definitive management, the surgery is ended and the patient recovers succesfully.

Conclusions: LLR is an advanced procedure that requires skillful surgeons trained in this techniques, Hepatic Vein Injuries is one of the worst complications of this surgery. The backflow bleeding can be minimized with fluid restriction, muscular relaxation and the effect of pneumoperitoneum, but, the experience of the surgeon permits the initial temporary control trough laparoscopic, and then proceed to definitive management via laparoscopy or laparotomy.

V162 - Video - Liver and Biliary Tract Surgery

Laparosocpic Choledochoscopy and 'Rendezvous' Duodenoscopy for Complicated Gallstones Extraction. Clinical Case Report

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Aims: Up to 15–18% of patients admitted for cholecystectomy had concomitant common bile duct (CBD) stones. Removal of these stones is obligatory to avoid serious postoperative complications.

Methods: 43 years female patient admitted due to cholecysto and choledocholithiasis. Previously she was treated 3 weeks for mechanical jaundice unsuccessfully in other hospital. Starting bilirubin level was 320μmol\l and ultrasonography showed dilated intra and extra hepatic ducts with suspected gallstonesin CBD with no signs of acute cholecystitis.

Results: Next day during the ERCP 1 gallstone was removed. Cholangiography showed dilated CBD of $\sim$ 1,2 cm, cystic duct $\sim$ 1.0 cm. Even though on the next day bilirubin level decreased by 70μmol\l, but on the 3rd postERCP day bilirubin level increased up to 480μmol\l. Additional ERCP revealed new gallstone in CBD, however the extraction was unsuccessful. Laparoscopic cholecystectomy with choledochotomy and choledochoscopy was initiated. Three gallstones from CBD were removed but one was stuck in the distal part. Furthermore intraoperative "rendezvous" duodenoscopy was carried on. Gallstone was removed upwards. Inspection of bile ducts followed by laparoscopic suturing of common bile duct was performed.

Conclusion(s): Patient was discharged on 6th postoperative day with bilirubin level of 28μmol\l and no early postoperative complications.

V163 - Video - Liver and Biliary Tract Surgery

Resection of Liver Posterior Segments Using Glove Port Assisted with Intercostal Trocar

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Background: The catastrophic abdomen, as the result of multiple surgeries, is usually considered a contraindication to perform minimally invasive surgery. In those patients the difficulty of perform a laparoscopic liver resection increases markedly. Our target is to show an alternative to traditional surgery for this patients.

Method: We present a case of hepatic liver metastases of neuroendocrine origin in segment VII in a 77-year-old male. He had underwent multiple laparotomies (5), for both elective and urgent procedures, afecting all the abdominal quadrants. The primary neurodencrine tumor was located at the stomach, an scheduled magnetic resonance revealed a nodular lesion of 13 mm in diameter in the segment VII of the Liver, compatible with liver metastases. Surgery began positioning the patient supine lateralized to the left side. We started with an incision on the right subcostal laparotomy for the preparation of the single port "Glove port" using a latex surgical glove. the surgery was succesful whitout complications.

Conclusions: The use of "reduced port surgery" for laparoscopic liver resection in patients with catrastophic abdomen is safe and feasible, allowing those patients to benefit of the advantages of minimally invasive surgery. The use of "GLOVE PORT" is less expensive than usual single ports. The intercostal ports improve the access to lesions located in the posterior segments of the liver. Therefore, we present an innovative method for use in cases of liver lesions in patients with posterior segments that otherwise would be treated by more aggressive techniques.

V164 - Video - Liver and Biliary Tract Surgery

Laparoscopic Recholecystectomy in a Gallbladder Remnant 13 Years After Open Cholecystectomy

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Recurrent abdominal pain after gallbladder surgery may present post cholecystectomy syndrome in 10–40% of patient. we present a 62 years old woman presented thirteen years after open cholecystectomy complaining of upper abdominal pain and dyspepsia for couple of weeks. Abdominal ultrasonography revealed multiple stones in anatomical area of gallbladder fossa. In laparoscopic exploration the adhesions were successfully dissected and the gall bladder remnants identified the cystic duct and artery were untouched in the previous surgery. laparoscopic cholecystectomy was uneventful with speedy recovery and resolution of symptoms.

V165 - Video - Liver and Biliary Tract Surgery

Robotic-Assisted Complete Excision of Type I Choledochal Cyst and Roux-An-Y Hepaticojejunostomy

E. Kakiashvili[1], E. Brauner[2], O. Ben Yshai[2], Y. Kluger[2]

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A 30 years old, female patient presented with recurrent right upper quadrant (RUQ) abdominal pain (during last two years), without nausea, vomiting or jaundice. Her blood laboratory examinations were within normal limits, including serum CA 19–9.

Ultrasonography (US) demonstrated a large cystic dilatation of common bile duct (CBD). An abdominal computed tomography scan (CT) and MRCP revealed a type I choledochal cyst, measuring 3.5 cm in diameter.

Patient underwent da Vinci robot-assisted excision of the type Icholedochal cyst, hepaticojejunostomy and extracorporeal jejuno-jejunostomy of Roux-an-Y limb.

Total operating time (ORT) was 325 min. Three day after operation patient started regular diet and was discharged on day fife.

Pathology result confirmed choledochal cyst without evidence of malignancy.

V166 - Video - Liver and Biliary Tract Surgery

Robotic-Assisted Excision of Common Bile Duct Stricture and Roux-An-Y Hepaticojejunostomy

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29 year old, female patient referred to our institution with common bile duct stricture, caused by iatrogenic injury during laparoscopic cholecystectomy.

During last year, patient suffered from recurrent episodes of ascending cholangitis. Recently, she underwent ERCP and severe stricture of middle CBD was diagnosed. Plastic stent was inserted through the CBD. MRCP also showed severe stricture of CBD with dilatation of biliary tree, proximal to the stricture.

Due to severe and resistant (did not resolved by recurrent dilatation) structure of middle CBD, she was referred to operation.

Patient underwent da Vinci robot-assisted excision of the CBD stricture, hepaticojejunostomy and extracorporeal jejunojejunostomy of Roux-an-Y limb.

Total operating time was 320 min. Day three after operation patient started regular diet and was discharged home on day four.

Final pathology has shoved part of CBD with severe inflammation.

V167 - Video - Liver and Biliary Tract Surgery

Robotic-Assisted Extraction of Large CBD Stones and Choledochoduodenostomy

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63 years old, female patient presented with recurrent right upper quadrant (RUQ) pain, without fever, nausea or vomiting.

30 years ago, patient underwent open cholecystectomy due to cholelithiasis. During last four years, she suffered from recurrent attacks of biliary colic or ascending cholangitis.

Patient several times underwent ERCP and extraction of stones from common bole duct (CBD).

At her last admission, ultrasound (US) revealed recurrent large stones in CBD with significant dilatation of extra and intra hepatic biliary duct (CBD up to 2 cm).

Her blood laboratory examinations showed mild elevation of bilirubin and liver functional tests (LFT'S).

Patient underwent da Vinci robot-assisted choledochotomy, extraction of CBD stones and choledochoduodenostomy.

Total operating time (ORT) was 240 min. Two days after operation patient started regular diet and was discharged home on day four.

V168 - Video - Liver and Biliary Tract Surgery

Single-Incision Laparoscopic Caudate Lobe Resection and Choledocholithotomy for Hepatolithiasis and Choledocholithiasis: A Case Report

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Background: Single-incision laparoscopic hepatectomy is an extremely demanding technique which has a potential benefit of low postoperative pain, few incisional complications, and fast recovery. There is no previous report about applying this technique to caudate lobe resection in the literature.

Case Report: A 57 y/o female patient had a history of undergoing standard multi-incision laparoscopic cholecystectomy for gallbladder adenocarcinoma in situ. Although there is no symptom, intrahepatic ducts (IHD) dilatation with cluster of stones in S1 and a distal common bile duct (CBD) stone was diagnosed by abdominal magnetic resonance imaging during follow-up. Except elevated serum levels of *a lkaline phosphatase and gamma-glutamyl transpeptidase, other laboratory tests showed no specific finding*. We performed single-incision laparoscopic caudate lobectomy and choledocholithotomy via a 4-cm left paraumbilical incision. A 1-cm distal CBD stone was extracted by choledochoscopic basketing via an 8-mm vertical choledochotomy which was repaired with primary closure. At first we separated the spigelian lobe from the inferior vena cava with short hepatic veins secured by ligation or clipping. Then the glissonian pedicle containing the dilated IHD was divided by linear staplers. The operative time was 452 min and the estimated blood loss was 150 ml. Complete stone clearance was achieved and the pathologic examination revealed bile duct hyperplasia with chronic inflammation. The patient was discharged five days after the operation uneventfully.

Conclusion: Single-incision laparoscopic caudate lobectomy and choledocholithotomy is feasible for S1 hepatolithiasis and choledocholithiasis by experienced laparoscopic surgeons. It provides low postoperative pain and fast recovery.

V169 - Video - Liver and Biliary Tract Surgery

Combined Laparoscopic Low Anterior Colon and Partial Hepatic Resection of Segment VI and VIII Using Revolix-Laser

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Aim: 15–20% of colorectal CA is associated with liver metastasis.

Methods: I report the simultaneous laparoscopic resection of recto sigmoid tumor and laparoscopic resection of segment VI and segment VIII using revolix laser. The only laser specifically developed for soft tissue surgery.

Results: The video will show the steps used in low anterior resection and the simultaneous resection of the liver metastasis. The patient did well and was discharged from hospital 5 days post operation with no blood transfusion.

Conclusion: Therefore, laparoscopic and use of technology like revolix laser can be used in major liver surgery to reduce blood transfusion and post operative complications.

V170 - Video - Liver and Biliary Tract Surgery

A Case of Totally Laparoscopic Roux-En-Y Hepaticojejunostomy with Right Hepatic Duct for its Iatrogenic Damage

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Accidental damage of the main bile duct is a serious complication that occurs in 0.4–0.9% and does not tend to decrease. The probability of such events increases with the anomalies of the biliary tree. This case demonstrates the damage of the right hepatic duct Type 5/C/V-/Ls+/Ey/M/O according EAES classification during routine laparoscopic cholecystectomy in a 66 y.o. female patient. The main reason for this complication was an abnormal confluence of the cystic duct into the right hepatic duct and lack of identification of the elements of the neck of the gallbladder. The video presents a totally laparoscopic Roux-en-Y hepaticojejunostomy with narrow (4 mm) right hepatic duct using the carcass drainage. The posterior and anterior sides of anastomosis are formed by separated running intracorporeal sutures with PDS 5/0. The anastomosis was reinforced by the wrap created with the seromuscular sutures. The operative time was 345 min and time of anastomosis formation was 105 min. Postoperative period was uneventful. MRCP on second postoperative day shows normal bile flowing without extravasation. Hospital stay was 5 days. Follow-up during 6 months did not reveal any adverse effects.

Conclusion: the correction of severe injuries of extrahepatic bile duct even with the technical demanding reconstructive steps can be performed by laparoscopy without conversion.

V171 - Video - Liver and Biliary Tract Surgery

Surgery of Biliary Cyst: Use of Indocyanine Green

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Aim: We want to highlight the benefits of intraoperative use of Indocyanine green (ICG) for the visualization of the biliary tree and its relationship with biliary cysts.

Methods: A dose of 25 mg of indocyanine (diluted to 10 ml of solution) was administered to a patient with a diagnosis of biliary cyst with a suspicious connection with the biliary tree.A laparoscopic surgery was approached. ICG use allowed to visualize the whole biliary tract and the lack of connection of the cyst with it. Colecistectomy and cyst asportation was performed without complication.

Methods: Intraoperative visualization of the biliary tree with ICG helped the surgeon during procedure with no longer operative time.

Conclusion(s): Routinely use of ICG in biliary surgery is a safe, feasible procedure and represents a great auxilium for the surgeon in case of biliary cysts in which the connection with the biliary tract is not clear.

V172 - Video - Liver and Biliary Tract Surgery

Laparoscopic Completion Choleystectomy and Common Bile Duct Exploration for Symptomatic Gallbladder Remnant

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Aims: Sub-total cholecystectomy can sometimes be the safest option. However, the remnant gallbladder (GB) can be source of symptomatic gallstones. We present a video which shows laparoscopic completion cholecystectomy and common bile duct exploration (CBD) for recurrent CBD stones following a previous sub-total cholecystectomy and ERCP.

Methods: A 60 year old patient with previous laparoscopic sub-total cholecystectomy 20 years ago and an ERCP to clear retained stones 4 years ago. She presented with recurrent episodes of pain and symptoms suggestive of obstructive jaundice. A repeat MRCP showed retained CBD stones.

After insertion of laparoscopic ports, adhesions from the previous operation were divided. 2 cm gallbladder remnant as seen on the MRCP was dissected. An intraoperative cholangiogram confirmed 3 non obstructive stones in the CBD as seen on pre-operative MRCP.

CBD exploration was performed through a 5 mm transverse choledochotomy. All the stones were retrieved in a Dormia basket. Choledochotomy was closed with continuous 3/0 vicryl. A 20F Robinson's drain was placed at the site of the dochotomy. Cystic artery and duct were clipped and divided. GB remnant dissected and retrieved through the epigastric port.

Results: Post-operative recovery was unremarkable. The patient was discharged the following day after removing the drain.

Conclusions: With increasing incidence of sub-total cholecystectomy for difficult and adherent gallbladders, the incidence of symptomatic stones from GB remnant is likely to rise. Completion cholecystectomy will be the only option in surgically fit patients. We demonstrate that laparoscopic completion cholecystectomy and simultaneous CBD exploration is not only feasible, but also an effective and a final operation in this group of patients.

V173 - Video - Liver and Biliary Tract Surgery

Laparoscopic Retrocolic Roux-En-Y Biliary Bypass for the Management of a Retained 5 cm Common Bile Duct Stone

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Aim: Biliary bypass is the choice of treatment for a large and impacted retained Common Bile Duct (CBD) stone with recurrent episodes of biliary sepsis. We present a video of Laparoscopic Roux-en-Y biliary bypass.

Methods: 72 year female presented with recurrent episodes of biliary sepsis. The patient had had a laparoscopic converted to open cholecystectomy 17 years ago. A CT scan showed a large impacted retained CBD stone. MRCP showed a 55× 25 mm calculus lodged in the common bile duct with severe upstream dilatation of the intra-hepatic bile ducts.

Following laparoscopic access, adhesions from the previous operation were divided. CBD was dissected and a vertical choledochotomy performed. The large stone was clearly impacted. Choledochoscopy was not possible into the distal duct due to the impacted stones. Proximal biliary tree was washed with saline through the choledochoscope. All the fragments were washed out until clean bile was seen at the choledochotomy.

Thirty centimetres each of alimentary and biliary limbs were measured. Jejuno-jejunal (JJ) anastomosis was performed with a 60 mm white linear stapler and enterotomy closed with 2/0 monocryl. JJ mesenteric defect was closed with 2/0 Ethibond. Biliary limb was then passed through the transverse mesocolon. Choledocho-jejunostomy (CJ) was performed with 2×3/0 barbed 15 cm long sutures (V-Loc^{TM}-Medtronic) starting posteriorly in the midline and finishing anteriorly. A 20F Robinson's drain was placed at the anastomosis.

Results: The patient recovered well from the operation. There was no leak from the CJ anastomosis. Patient was discharged on the 4th post-operative day. The patient did not have any further episodes of biliary sepsis.

Conclusions: Roux-en-Y biliary bypass is the treatment of choice for a large impacted CBD stone with recurrent biliary sepsis. Laparoscopic approach is a safe and an effective means to achieve adequate biliary drainage. Furthermore, laparoscopic approach leads to quicker recovery and lesser post-operative morbidity compared to an open operation.

V174 - Video - Liver and Biliary Tract Surgery

Cholecystectomy Using Conventional Lap, Minilap Needlescopic or Robotic Single-Site Approaches. A Technical Comparison

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Introduction: Laparoscopic approach is considered the method of choice for cholecystectomy. Lately, novel approaches have appeared, including the use of needlescopic 2,8 mm minilap instruments or a robotic Single Site platform.

Aim: To present our experience from 71 cholecystectomy cases.

Methods: From March 2011 till December 2016 we performed 71 cholecystectomies. In 48 cases, a conventional 4-trocar (one 12 mm optic trocar and three 5 mm working trocars) was used. For the rest of the patients a minilap (2,8 mm needlescopic instrument) technique or a robotic single site approach (through a single 17 mm infraumbilical incision) were used. In all cases, standard dissection of the Calot's triangle, critical view recognition, cystic duct and artery ligation (using hemolock clips) and detachment from the liver bed took place. Drains were not routinely used in our setting.

Results: All procedures were performed without intraoperative complications. A drain was used only in 5 cases of conventional approach with severe cholecystitis. In one case, one of the two minilap ports had to be converted in a 5 mm laparoscopic port because of retraction difficulties from an inexperienced assistant. All patients followed an uneventful postoperative course and were discharged on postoperative days 1 or 2. Two patients from the conventional laparoscopic group remained for a second day of follow up due to referred pain on the shoulder. Robotic and needlescopic groups expressed the greater satisfaction concerning perioperative pain and need for analgesics as well as cosmetic result.

Conclusions: Laparoscopic cholecystectomy can be safely performed using 2,8 minilap instruments or a robotic single site techniques. In both techniques postoperative pain may be prevented and better cosmetic results achieved but overall costs may increase, especially when the robot is used.

V175 - Video - Liver and Biliary Tract Surgery

Laparoscopic Resection of the Hepatic Caudate Lobe For Colorectal Metastasis

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The coudate lobe, or segment 1 (S1) is located in the posterior part of the liver, between the hepatic hilum and inferior vena cava. This area –like other posterior segments- is difficult to access surgically, and especially challenging with a laparoscopic approach.

We present tha case of a 76 year old male patient, with a 30 mm metachronous colorectal hepatic metastasis limited to the caudate lobe, that was approached with laparoscopy, and successful laparoscopic caudate lobe resection was performed.

The operative time was 90 min, the estimated blood loss was less than 100mls. The postoperative period was uneventful and the patient was discharged 48 h after surgery.

The histology report confirmed a 30 mm colorectal metastasis of the Spiegel-lobe, the resection margin was 6 mm wide.

Our conclusion is that in certain cases the laparoscopic resection of the Caudate lobe, and especially the Spiegel lobe –though difficult to access- may be very beneficial for the patient with significantly reduced hospital stay and less chance for postoperative morbidity.

V176 - Video - Liver and Biliary Tract Surgery

Combined Laparoscopic and Endoscopic Treatment of Common Bile Duct Injuries

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Aim of the study: The video shows safeness and feasibility of combined laparoscopic and endoscopic approach for the treatment of a complete section of the main bile duct.

Methods: We herein report the case of a 37 y.o. woman underwent to laparoscopic cholecystectomy, complicated by the complete section of the common bile duct. The lesion was confirmed by magnetic resonance cholangiopancreatography. We planned a combined laparoscopic-endoscopic approach 48 h late. Once removed the clips (Hem-o-lok ligating clips) from the bile duct stumps, using intraoperative fluorescent imaging in order to obtain better visualization of the biliary tract, a laparoscopic-endoscopic rendez-vous was performed and two 9 French stents were placed. The procedure was completed by a laparoscopic end-to-end ductal anastomosis, using 3–4 PDS 5–0 interrupted sutures, after complete liver mobilization.

Results: No postoperative complications were observed and the patient was discharged 5 days after the procedure. After 7 months, in January 2017, the patient has undergone ERCP with removal of biliary stents.

Conclusion: Combined laparoscopic and endoscopic approach for total transection of the common bile duct is a safe and feasible option in selected cases, with excellent functional, phisiological and anatomical results.

V177 - Video - Liver and Biliary Tract Surgery

Laparoscopic Cholecystectomy for Chronic Cholecystitis. Just a Blink from a Major Disaster. Video Tips to Avoid The Unexpected

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Background: Generally, surgeons are experienced in elective laparoscopic cholecystectomies. Patients suffering from chronic cholecystitis are either operated by open approach or they are converted to open in most of the cases. Laparoscopic approach in such cases needs advanced surgical skills, deep knowledge of possible anatomy variations and experience to delineate all the surgical landmarks in order to minimize bile duct injuries that complicate laparoscopic cholecystectomies in 0,5%.

Aim: To demonstrate the right technique for laparoscopic cholecystectomy for chronic cholecystitis and to focus on important tips to avoid major complications.

Case report: A 70 years old male patient was admitted to our department with chronic symptoms of cholecystitis. He had a previous successful ERCP for common bile duct stones confirmed no extra variation of extra hepatic bile ducts.

Results: The gallbladder was completely covered and firmly attached to the transverse colon, omentum and duodenum. It was contracted with thickened walls and quite short cystic duct. There was an aberrant anatomy of the right hepatic artery that was passing to the right of the common bile duct. The procedure was quite demanding. We fully dissected off the common bile duct and mistaken for cystic duct. We were about to clip and divide, before we decided to delineate all the anatomic landmarks like Rouviere sulcus, triangle of Calot, critical window of safety. It was really scary when we realized the major disaster we would have been through by dividing the common bile duct (Strasberg E injury). The operation was safely completed laparoscopically leaving behind the posterior wall of the gallbladder, which was unable to be detached from Glisson's liver capsule and it was burnt. Operation time was 90 min. No postoperative complications.

Conclusions: Laparoscopic cholecystectomy for hot gallbladders is feasible. It can be safe in hands of experienced laparoscopic surgeon who strictly follows all the surgical landmarks. The use of intraoperative cholangiography may be imperative. The most important step before dividing anything was to delineate the anatomy especially in such cases.

V178 - Video - Liver and Biliary Tract Surgery

Laparoscopic Common Bile Duct Exploration, Different Approaches and Techniques. A Video Case Presentation

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Aim: To demonstrate various approaches during laparoscopic exploration of common bile duct for choledocholithiasis.

Methods: A video presentation detailing various approaches/techniques during a challenging case of elective laparoscopic cholecystectomy with common bile duct exploration, including trancystic approach as well as use of basket trawling and electrohydraulic lithotripsy.

Results: Multiple small common bile duct stones were extracted trancystically through a wide cystic duct. Large impacted stone could not be removed by basket trawling and a lithotriptor was used instead for fragmentation and disimpaction.

Conclusion: Surgeons should be familiar with different approaches during common bile duct exploration and tailor according to individual presentation and intraoperative findings.

V179 - Video - Liver and Biliary Tract Surgery

4 K Laparoscopic Right Hepatectomy

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Introduction: Safety and efficacy of laparoscopic approach have allowed its widespread diffusion in recent years. Despite this, the number of major hepatectomies among literature series still remains relatively limited, due both to technical challenges of procedures and to the reduced pool of candidates suitable for this type of surgery. The video shows a step by step approach to laparoscopic right hepatectomy using the 4 K technology.

Materials and Methods: Laparoscopic right hepatectomy using 4 K technology at the Hepatobiliary Surgery Unit of San Raffaele Hospital is reported. The video focuses on surgical technique and employed devices.

Results: Right hepatic artery and right portal vein are isolated and dissected. Right liver is mobilized. Right hepatectomy is performed through anterior approach, so both IVC and right hepatic vein dissection are performed at the end of parenchymal transection.

Conclusion: Laparoscopic approach is feasible,safe and effective for laparoscopic right hepatectomy thanks both to evolution of surgical technique and technology and to a correct selection of candidates. 4k technology allows to improve surgical results thanks to images magnification and improved definition.

V180 - Video - Liver and Biliary Tract Surgery

Safety and Feasibility of Laparoscopic Liver Resection with Associated Lymphadenectomy for Intrahepatic Cholangiocarcinoma

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Intrahepatic cholangiocarcinoma is a relatively uncommon indication for laparoscopic surgery because of technical challenges related to the frequent need for complex procedures and the necessity to perform formal regional lymphadenectomy. The video shows how to perform safely and effectively lymphadenectomy in these patients, with dissection of nodes in the hepatoduodenal ligament, of the proper hepatic artery and of the posterior surface of the head of pancreas. This technique allows to this subgroup of patients the achievement of improved outcomes associated with the minimally invasive approach.

V181 - Video - Morbid Obesity

Complete Laparoscopic Fistulectomy as a Treatment for a Chronic Fistula Following Sleeve Gatrectomy

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Aims: Sleeve gastrectomy is nowadays the most performed bariatric procedure worldwide. Gastric fistula remains a serious post-operative complication and it occurs in 1 to 2% in recent large series. Full endoscopic management remains the best treatment when possible. Other surgical treatments such as total gastrectomy or fistulo-jejunostomy are alternative options to treat chronic fistula. In this article, we expose a complete laparoscopic fistulectomy as the treatment for a chronic gastric fistula following SG.

Methods: We detailed a case-report concerning a 44 year old female patient with a chronic gastric fistula following SG. The patient had a history of adjustable gastric band in 2009. This band was removed in 2011 due to a slippage. The patient then had SG in March 2015 as her body mass index (BMI) was at 38 kg/m^2. The patient suffered a post-operative gastric fistula managed endoscopically with double pigtail drainage and healed by day 39. 3 months following surgery, the patient presented repetitive trocar site abcesses with purulent discharge. Despite normal upper GI series, a chronic gastric fistula was suspected and exploratory laparoscopy was scheduled.

Results: The operation was performed laparoscopically. We found a fistula tract between the trocar site abcess and the upper third of the sleeved stomach. The fistula was entirely dissected and controlled by applying a linear stapler on a healthy gastric tissue. The fistula was then resected "en monobloc" along with the abdominal wall part including the trocar site as shown in the video. Operative time was 50 min. No complications were noted and the patient was discharged on the second postoperative day. The patient became asymptomatic and was controlled 1 year from surgery with normal upper GI series.

Conclusion: Total laparoscopic fistulectomy could be an option for controlling chronic fistula after SG. This procedure should only be proposed in case of very low output fistula localized under the gastro-esophageal junction. More cases are still needed to define the best way to manage these patients.

V182 - Video - Morbid Obesity

Linear Stapler Malfunctioning During Laparoscopic Sleeve Gastrectomy

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Aim: Laparoscopic Sleeve gastrectomy (SG) has obtained a great diffusion because of its effectiveness in terms of weight loss and comorbidity resolution. It is considered a safe surgical procedure, with low rates of mortality and morbidity. Most of SG complications are related to the long staple-line; the intraoperative malfunctioning of the linear stapler is uncommon but dangerous, as it might cause bleeding, strictures or dehiscence of the staple line requiring the conversion to Gastric Bypass (TG) or total gastrectomy (TG).

Methods: We present the case of a 40 year-old morbidly obese female with a Boby Mass Index (BMI) of 43.5 kg/m^2 who underwent a SG.

Results: LSG was commenced according to our usual technique. The gastro-colic ligament was dissected starting at about 6 cm from the pylorus and continuing until the angle of His with the complete mobilization of the gastric fundus. SG was performed by means of linear stapler applied alongside a 48-Fr tailoring bougie, starting about 6 cm from pylorus. Stapler mulfunctioning occurred during the second firing, at the level of the incisura angularis. In particular two out of the three raws of staples were not applied. Since the gastric tubule appeared not to be so narrow, a new stapler was fired medially in order to exclude the damaged one. Calibrating bougie was kept in place to avoid gastric stenosis. SG was then completed without any other problems. At the level of the incisura angularis, staple line was reinforced with absorbable oversewing suture. Methylene blue dye test performed at the end of the procedure did not reveal leaks or stenosis. Post-operative course was uneventful and the patients was discharged on postoperative day 6. A upper gastrointestinal contrast study was performed one month after SG, excluding stenosis of the gastric tubule.

Conclusion: Linear stapler malfunctioning is a rare but worrisome intra-operative complication of SG. Conversion to GB or TG is not always necessary. Whe the gastric tubule appear to be wide enough, the creation of a new inner staple line can represent a feasible and safe option.

V183 - Video - Morbid Obesity

Surgical Technique of Long Sleeve Gastrectomy to Make the Stomach Equally Thinner from 1 cm from the his Angle to 1 cm from the pyloric Ring

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Laparoscopic sleeve gastrectomy (SG) is one of the most frequently performed procedures in metabolic surgery. There are few studies on the details of the surgical procedure, such as with or without of antral resection and the shape of the residual stomach.

Purpose: Introduce a novel surgical strategy long-sleeve gastrostomy (LSG) of excising the large curvature side between 1 cm from the His angle and 1 cm from the pylorus ring to make the stomach equally thin.

Surgical technique: In order to securely remove the fundus, pull the two-point support yarn over the major curvature side and pull it toward the abdominal wall side (upward). By keeping the condition that the small curvature side is on the dorsal side and the large curvature side on the ventral side, the field of view around the cardia is secured and peeling to the gastro-esophageal junction is easy.

As the stomach is raised, the large curvature side is cut by the automatic suturing machine to the immediate cardia (1 cm) so as to draw a circle with the long diameter at the corner of the stomach, and the vestibule part is evenly reduced in diameter, so the gastric horn Similarly, in the vestibular part, two point support yarn is applied to the major curvature side and pulled toward the abdominal wall side (upward), and it is cut to 1 cm on the pyloric hole mouth side.

? Stapler suture line is sewn with 25 to 30 needle nodules with EndoQuick Suture (2–0 ELmelt ©) to prevent suture failure and postoperative bleeding and to prevent longitudinal twisting which is likely to occur in continuous suturing.

Results: LSG have been performed in 62 patients from April 2015 to December 2016. LSG decreased reflux esophagitis (4.8%), narrowing of the residual stomach, remnant of the ulcer and stagnation in the pyloric region (0%). Excessive weight loss rate (54.5%) at 6 months postoperatively and fasting blood glucose (106.5) and HbA 1 c (5.7) were also effective.

V184 - Video - Morbid Obesity

A New Technique for Liver Retraction in Laparoscopic Sleeve Gastrectomy

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Introduction: Liver retraction is an important step in laparoscopic sleeve gastrectomy(LSG) to provide adequate exposure. Most of the current techniques have a learning curve and increase the duration of the procedure.

Purpose: This article aims to present a new method for liver retraction in LSG, which we have developed owing to our clinical experience. In this method, retraction of the liver and stomach was provided by a laparoscopic surgical instrument inserted in the right subcostal area in different positions and stages of the procedure.

Materials and Methods: The data of 576 patients, who underwent LSG between January 2015 and December 2016, were analyzed retrospectively. Demographic characteristics, body weight, body mass index (BMI), the amount of drainage and accompanying co-morbidities such as type 2 diabetes mellitus (DM) and hypertension (HT) were investigated.

Result: Of all the patients included in the study, 437 were female (75.8%) and the mean age was 38.9 years (17–68). The mean body weight was 130.8 kg (94–240) and the BMI was 47.4 kg / m^2 (36–106). Type 2 DM and HT was present in 184 (31.9%) and 147 (25.5%) patients, respectively. The mean amount of drainage was 59 cc, 66 cc and 50 cc in the postoperative 1st, 2nd and 3rd days, respectively. We did not need an additional retractor to help with liver retraction in our study. There were no complications during the perioperative period.

Conclusion: This technique, which is defined for the first time by us, can be used safely and effectively for the purpose of liver retraction in LSG. If necessary, it is easy to maneuver during repositioning, does not require a learning curve and does not cause an increase in the duration of the operation.

V185 - Video - Morbid Obesity

Laparoscopic Conversion of a Mini Gastric Bypass to a Conventional Gastric Bypass, for Severe Gastroesophageal Bile Reflux

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Introduction: Severe bile reflux is a common complication after mini gastric bypass, generally caused by a stomach pouch which is too short.

Case-report: We report a case of a 36-year old female patient with a history of a mini-gastric bypass two years ago, for a BMI of 44.9 kg/m^2. Her medical history further included a cholecystectomy and two caesarean sections. As a result of the procedure her BMI dropped to 24.1 kg/m^2, but she started complaining of severe heartburn due to therapy resistant gastroesophageal bile reflux, for which she had to sleep in an upright position. A gastroscopy and upper gastrointestinal series investigation showed no abnormalities. We decided to perform a laparoscopic conversion of the mini gastric bypass to a conventional gastric bypass, in order to prevent the severe bile reflux and to remain her weight loss. After the procedure, the patient noticed a significant reduction in her heartburn symptoms and she was able to leave the hospital after three days.

Discussion: We decided to perform a conversion to a conventional gastric bypass by dividing the gastrojejunostomy, in order to fashion the Roux-en-Y limb with the classical measurement. It's also possible to keep the gastrojejunostomy intact by dividing the afferent limb next to the previous gastro-jejunal anastomosis and creating a jejuno-jejunal anastomosis distally on the alimentary limb. However, this can result in malabsorption if the common limb is too short. A third option is to perform only a jejuno-jejunal anastomosis (Braun's anastomosis).

Conclusion: A laparoscopic conversion of a mini gastric bypass to a conventional gastric bypass, by dividing the gastro-jejunal anastomosis, is a safe procedure in treating bile reflux, without the risk of post-operative malabsorption.

V186 - Video - Morbid Obesity

Laparoscopic Loop Gastric Bypass -A Standard Surgical Technique

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Obesity surgery offers many possible alternatives for metabolic patients, and among them, we should always find the best one for our patient.

Laparoscopic loop gastric bypass (Loop-GBP) has proven to be technically simple, safe, and effective, resulting in efficient weight loss and major benefits on the main comorbidities. Beside the mandatory procedure choosing criteria, the surgical performance is very important.

Aim: We aim to present the operative technique of Loop-GBP, systematic, insisting on the laparoscopic surgery details, as teaching experience for less experienced surgeons.

Methods: In this video, you will see the procedure of laparoscopic loop gastric bypass in the hands of a young surgeon, outlining the major operative steps and identifying the difficulties in performing this kind of surgery for the less experienced ones.

Results: All the steps of the procedures were performed per the standard protocol, avoiding intraoperative complications and with acceptable longer operative time.

Conclusions: The surgical procedure must be divided in clear steps to perform it safety and with the best results. Besides the theoretical considerations, the technical aspects underline the experience of the surgeon doing the procedure, the know-how and useful tips and tricks.

V187 - Video - Morbid Obesity

De Novo Severe Gastro-Esophageal Reflux After sleeve Gastrectomy and Cruroplasty: Convertion to R-En-Y Gastric Bypass and Hiatal Hernia Repair

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Background: The worldwide increase in bariatric surgery is associated with an increase in revisional bariatric procedures.

Methods: We present the case of a fifty-five years old, obese female patient BMI 39 kg/m^2, who underwent in 2013 to Laparoscopic sleeve Gastrectomy associated with posterior cruroplasty due to a small hiatal hernia (<3 cm) and a mild gastro-esophageal reflux (GERD) without esophagitis sign. The comorbidities were hypertension and hyperinsulinemia. After 30 months ,she had recurrent symptomatic GERD not responding to medical treatment, with evidence of GERD on radiological contrast study (Gastrografin®), while her BMI was 25.7 kg/m^2 and all the comorbidity were resolved.

Results: we present the video of conversion to laparoscopic RnY gastric bypass LRYGB associated with posterior cruroplasty, with marked improvement of GERD symptoms after reoperation.

Conclusion: laparoscopic conversion from LSG to RYGB associated with a posterior cruroplasty is feasible and useful for GERD symptoms control after primary LSG.

V188 - Video - Morbid Obesity

Resleeve Gastrectomy - A Reliable Revisional Procedure After Sleeve Gastrectomy

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Background: Laparoscopic gastric sleeve (LSG) is a well-established bariatric procedure with good results on weight loss and remission of comorbidities.

For the patients with weight regain or insufficient weight loss after LSG, the laparoscopic redo sleeve can be considered as a revisional option if a large or enlarged gastric tube is demonstrated.

Aim: The objective of this study is to evaluate the results of laparoscopic redo sleeve as revisional procedure after failed gastric sleeve.

Method: A prospective study on 28 patients who underwent laparoscopic gastric resleeve from August 2012 to October 2016 in our clinic has been performed. The techniques of laparoscopic re-sleeve have been studied and a step-by-step standard procedure has been developed for these very cases.

Results: Re-sleeve gastrectomy was performed by laparoscopy in all the cases. Technical aspects of the laparoscopic gastric re-sleeve are demonstrated in this video paper.

The mean time of intervention was 70±19 min. No intra-operative nor post-operative complications were encountered. After 3 years' follow-up, we observed a significant (P<0.05) mean body mass index reduction (-8±2.1 kg/m^2) and mean % excess weight loss (%EWL) increase (+41.0% ± 10.2%). Benefits on comorbidities control was encountered in all the cases.

Conclusion: Laparoscopic redo sleeve is a safe and efficient revisional option with effective weight loss and improvement of comorbidities.

V189 - Video - Morbid Obesity

Laparoscopic Sleeve Gastrectomy in a Patient with Situs Inversus

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Situs inversus is a congenital condition in which the major visceral organs are reversed or mirrored from their normal positions. Situs inversus is found in about 0.01% of the population. In the most common situation, situs inversus totalis, involves complete transposition (right to left reversal) of all of the abdominal organs.

We present a case of a 47 years old female patient with a BMI: 51 kg/m2, who was refereed to our clinic for the treatment of morbid obesity.

Her past medical history was consistent with: Hypertension, Type II diabetes mellitus, Asthma and situs inversus.

During the preoperative evaluation the chest X ray showed dextrocardia and upper GI series showed the stomach and duodenum in a mirror position.

The video illustrates the surgical technique in details. The operative time was 62 min, oral intake started on post operative day 1, and the patient was discharged on post operative days two in good medical condition.

V190 - Video - Morbid Obesity

Laparoscopic Mini Bypass for the Treatment of Failed Gastric Plication

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Aims: Laparoscopic Mini Bypass.

Methods: Laparoscopic Gastric Plication is one of the new procedures used for the treatment of Morbid Obesity with failure to have excess weight loss more than 50% in 25% of patients.

Results: Laparoscopic mini bypass is a procedure of choice for the treatment of failure with excellent weight loss in more than 10 cases done at the American University of Beirut Medical Center and affiliated hospitals.

Conclusion: The steps used in the procedure without unfolding the plication is shown in this video.

V191 - Video - Morbid Obesity

Laparoscopic Mini Gastric Bypass

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Aims: Single anastomosis bypass is gaining population due to excellent excess weight loss, high rate of cure of diabetes and minor complication with absence of internal hernias.

Methods: I represent my experience at the American University of Beirut Medical Center of 52 cases with 80% excess weight loss over 2 years and diabetic cure in 90% of cases with no complication.

Results: The video shows the steps used in this operation.

V192 - Video - Morbid Obesity

Reinforcement of Staple Line Using Barbed Suture and Fibrin Glue During Sleeve Gastrectomy

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Introduction: Laparoscopic sleeve gastrectomy is the most popular bariatric procedure in our days with good results concerning EWL and resolution of comorbidities. However, management of the staple line is still a matter of controversy in the literature and in international meetings.

Aim: We present our experience with staple line reinforcement during robotic sleeve gastrectomy.

Material: Our center has a large robotic experience (1522 procedures) from a great spectrum of general surgery and bariatric indications including : 40 robotic sleeve gastrectomies, 2 robotic bypasses, 1 robotic bypass restoration after Roux-en-O reconstruction, 1 robotic gastric band placement and 12 removals. In all cases of sleeve gastrectomy, after mobilization of the stomach and division of short gastrics using robotic Vessel Sealer device, suture line reinforcement takes place using robotic needle drivers and a continuous barbed suture. In addition, fibrin glue is spread over the reinforced line as a second means of protection. A drain is routinely used for 3–5 days postoperatively.

Results: 39 patients followed an uncomplicated course. One patient developed pulmonary embolism on postoperative day 1 and was transferred to ICU. All patients were assessed for leaks on postoperative day 2 by gastrographin swallow. No leaks were noted in any of the patients. Nasogastric tube was removed on day 2 and drain removed on postoperative day 3–5.

Conclusions: Reinforcing the staple line during sleeve gastrectomy by suturing and glue is strongly recommended by the authors. Robotics may facilitate sleeve gastrectomy, especially during reinforcement by enabling better intracorporeal suturing.

V193 - Video - Morbid Obesity

Transgastric Laparoscopic Removal of Gastric Band

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Aims: Intragastric migration is a severe late complication of the gastric band. Its incidence has been reported to be between 0.5% and 11%. The most common symptoms are weight gain, recurrence port infection, vomits and abdominal pain. The procedure of choice for the removal the gastric band is endoscopy while surgical treatment is reserved for cases in which endoscopy fails. In this video we present an innovative procedure of removal the migrated band through a laparoscopic transgastric approach.

Methods: We report the case of a 77 years-old woman with an adjustable gastric band for 4 years. Two years after its implantation, she presented infection of the port that required its removal. For the past year she has had recurrent vomiting. In the barium swallow a defect of replection in the esophagogastric junction was observed. Esophagogastroscopy showed partial inclusion of the band in the gastric lumen. Attempt to remove the band endoscopically failed, so a transgastric laparoscopic removal was proposed. The procedure begins with the application of a stitch on the gastric wall, which serves for the introduction of a 12 mm intragastric balloon trocar. This trocar allows the introduction of a 10 mm optic and also fixes and seals the stomach to the anterior abdominal wall. Another 5 mm balloon trocar is then inserted into the stomach. Once the intragastric trocars are placed, the location of the gastric band in the gastric lumen at the level of the esophagogastric junction is confirmed, and it is divided and sectioned with scissors and Ultracision. The band is then removed through one of the orifices in the stomach and the gastric orifices were sutured with Ethibond 2/0 stitches.

Results: Mean operation time was 60 min and the postoperative course was uneventful. Patient was discharge home in three days. With a follow-up of three months the patient is asymptomatic and with an adequate oral intake.

Conclusion: The procedure of choice for the removal of the migrated gastric band is endoscopy. However, when it is not feasible, removal of the band with transgastric laparoscopy approach appears to be as a possible alternative.

V194 - Video - Morbid Obesity

Surgical Management of Weight Regain After Distalisation of a Roux-En-Y Gastric Bypass

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Background: In case of weight regain after a Roux-en-Y gastric bypass (RNY); adding malabsorption by distalization of the entero-enterostomy could result in further weight loss. Until the end of 2013 we preferred lengthening of the alimentary limb and leaving a common limb of 100–150 cm (distalization type A/Brolin). However, results in terms of sustained weight loss were unpredictable and, in general, disappointing. Since 2014 we perform the more radical distalization (type B/Sugerman) in which the biliopancreatic limb is elongated leaving a common limb of minimum 100 cm and a total absorptive (alimentary and common) limb of 300 cm. In this video we present a relatively simple surgical way to enhance the malabsorptive part of a failed Type A distalization.

Patient & Methods: A 43-year old patient presented at our outpatient clinic with weight regain after previous bariatric surgery. She underwent a laparoscopic RNY in 2008. At that time her bodyweight was 124 kg and her body length 169 cm (BMI 43.4 kg/m^2). Her post-operative weight dropped to 85 kg (BMI 29.8 kg/m^2), but she regained weight up to 109 kg (BMI 38.2 kg/m2) and in 2013 a laparoscopic type A distalization procedure was performed. A very long alimentary limb of 7 m was created together with a common limb of 1.2 m, leaving the biliopancreatic limb of 50 cm. Her current weight is 114 kg (BMI 39.9 kg/m^2). The patient had a daily intake of only 1187 kcal/day. Upper gastro-intestinal series showed no gastric pouch dilatation. It was concluded the weight regain was not due to a loss of restriction and therefore a redo distalization procedure was proposed.

Surgical technique and video: The procedure exists of reducing the long alimentary limb to a 2 m limb and formally excluding 4.8 m of small bowel. The excluded bowel was not resected since it was isoperistaltically connected. After a three month follow-up period the patient is well and has lost 8 kg.

Conclusion: Shortening of the alimentary limb can be a feasible technique for patients with weight regain after a distalization type A procedure of a RNY. On short notice; this procedure resulted in significant weight loss without adverse effects. However, longer follow-up is needed to evaluate long term effects.

V195 - Video - Morbid Obesity

Robotic Single Anastomosis Duodenal Switch

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Standard BPD-DS is an effectice operation. However, it did not gain world-wide acceptance as it is technically difficult and has more complications even with laparoscopic way.Laparoscopic Single anastomosis duodenoileostomy(SADI) was introduced by Torres and his team and some other modifications such as SIPS have also been described.This video represents Ozmen modification of SADI as single anastomosis duodenojejunostomy in which anastomosis located 300 cm distal to the ligament of Treitz as duodeno-jejunostomy (*proximal approach, SADS-p*).We performed 50 cases of SADS-p laparoscopically. Herein the first robotic case of SADS-p is presented.Since then we performed over 10 cases of SADS-p using Davinci-Xi and we conclude that robotic way is much easier in patients with higher BMI who will undergo complex procedure.

V196 - Video - Morbid Obesity

Incidental Intra-operative Diagnosis of Voluminous Hiatal Hernia During Revisional Laparoscopic Sleeve Gastrectomy

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Aims: Hiatal hernia (HH) is often associated with morbid obesity and can occasionally represent an incidental finding during bariatric procedures. Laparoscopic sleeve gastrectomy (SG) has become the most commonly performed bariatric operation globally, in consideration of its effectiveness and safety profile. Although effects of SG on Gastroesophageal Reflux Disease (GERD) is controversial, it has been suggested that symptoms might be exacerbated by such type of surgery especially in presence of a preexisting HH.

Methods: We present the case of a 49-year-old morbidly obese female who has been previously operated on laparoscopic adjustable gastric banding. Gastric band was removed on year before SG because of an acute slippage and dilation of the gastric pouch. The patient did not complain of typical or atypical reflux symptoms before SG and pre-operative routine esophagogastroduodenoscopy did not reveal untoward findings.

Results: At laparoscopy, a voluminous sliding HH with a hiatal defect of about 5 cm was noted. However, since the patient has signed a written consent for SG and was free from reflux symptoms, decision was made to proceed towards the repair of the hiatal defect followed by completion of a conventional SG. The gastric fundus and the posterior gastric wall were completely freed from the adhesions owed to the previous banding. Diaphragmatic pillars were dissected and the distal esophagus was reduced in the abdomen. A posterior hiatoplasty was performed by means of interrupted non-absorbable stitches. SG was accomplished by means of linear stapler applied alongside a 48-Fr tailoring bougie. The upper portion of the staple line was reinforced with absorbable buttressing material. Post-operative course was uneventful and the patient was discharged on post-operative day 6. At a follow-up of 6 months, weight loss was satisfying and she did not complain of reflux symptoms.

Conclusion: Incidental intra-operative diagnosis of hiatal hernia during bariatric procedures is not unusual. In this case SG could represent a feasible and attainable option, anyway. Concomitant HH repair is recommended to reduce the risk of post-operative GERD development and the possible intra-thoracic migration of the gastric sleeve.

V197 - Video - Oesophageal and Oesophagogastric Junction Disorder

Robotic Enucleation of Leyomioma from Gastroesophageal Junction

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26 year old, female patient presented with upper abdominal pain and moderate difficulty during swallowing, started four month before admission.

Gastroscopy revealed submucosal mass in gastroesophageal junction. Endoscopic ultrasound (EUS) showed 3 cm sub mucosal mass. Cytology was taken from the lesion and result confirmed smooth muscle tumor(most probably leyomioma).

Her blood laboratory examinations were within normal limits.

Patient underwent da Vinci robotic enucleation of leyomioma from gastroesophageal junction.

Total operating time (ORT) was135min. During operation, frozen section has confirmed diagnosis of leyomioma.

Day after operation patient has started regular diet and was discharged home.

Final pathology report has confirmed diagnosis of leyomioma.

V198 - Video - Oesophageal and Oesophagogastric Junction Disorder

Hybrid Esophagectomy and Gastric Pull Through Due to End Stage Recurrent Achalasia after a Failed Open Heller Myotomy

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Achalasia is a rare neurodegenerative disorder of the esophagus with an estimated prevalence of 8 cases per 100,000 inhabitants and an incidence of 1 case per 100,000 inhabitants/year.

Achalasia may present in a non-advanced or advanced (end stage) stage. The latter is characterized by massive esophageal dilatation and/or the loss of the esophageal straight axis (sigmoid-shaped esophagus). The boundary to define the end stage of achalasia is variable. While some adopt the esophageal diameter of 6 cm as the cut-off, others adopt 7 cm.

The ideal treatment for end-stage achalasia is still debatable. Esophagectomy is a well-established procedure for this condition.

We present a case of a 49 years old male patient with a previous surgical history of open Heller myotomy through left thoracothomy in 2005. Since 2007 complained of dysphagia, regurgitation and weight loss. With the diagnosis of end stage recurrent achalasia, the patient underwent esophagectomy with gastric pull through via laparoscopy and open right thoracotomy. This video illustrates in details the surgical technique.

V199 - Video - Oesophageal and Oesophagogastric Junction Disorder

Laparoscopic Redo Heller Myotomy for Recurrent Achalasia

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Treatment failure with recurrent dysphagia after Heller myotomy occurs in fewer than 10% of patients, most of whom will seek repeat surgical intervention.

These reoperations are technically challenging, and as such, there exist only limited reports of reoperation with esophageal preservation.

It has been reported that 90% of patients with achalasia have had good to excellent long-term results after Heller myotomy and a combined antireflux procedure. Most patients with recurrent dysphagia will seek re-intervention, either by dilation or by reoperation.

Many reports of re-operative therapy for achalasia treatment failure consider esophagectomy as the principle procedure.

There exist limited reports of reoperation with esophageal preservation in such patients. Despite this, there is a growing trend in high-volume centers for reoperation with the goal of esophageal preservation. Some centers are gaining enough experience to identify factors that are predictive of re-operative outcome.

This video illustrates a case of laparoscopic redo Heller myotomy in a 27 years old male patient who underwent a few years ago an incomplete Heller myotomy. The surgical technique is shown in details. The pre-operative evaluation and post-operative follow up are discussed.

V200 - Video - Oesophageal and Oesophagogastric Junction Disorder

Robotics Facilitate Intracorporeal Suturing During Giant Paraesophageal Hernia Repair

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Introduction: Laparoscopic hiatal hernia repair is a well-established procedure with excellent results. Data is not as clear in the role of robotic surgery for the treatment of giant paraesophageal hernias.

Aim: To present our experience and techniques in the treatment of GERD, hiatal hernias and large paraesophageal hernias.

Material: In the context of the first robotic program in our country (1522 procedures since 2006) and after a large laparoscopic experience (171 lap repairs), we have used a robotic-assisted repair of hiatal hernia and reflux in 169 cases. A Nissen fundoplication (technique according to DeMeester) was performed in 165 cases, 2 mesh repairs (in one type IV hernia and one recurrence) and simple suturing of crurae in 2 cases. In 12 cases the indication was a giant paraesophageal hernia. In 10 of these cases a Nissen fundoplication was possible while the remaining two were treated with simple suturing of the crurae.

Results: In our experience use of the robotic system has proved especially helpful in the treatment of giant hiatal hernias and difficult paraesophageal hernias, facilitating dissection of the crurae and retroesophageal region, mobilization of the esophagus, recognition of the vagal branches, suturing and fashioning of the fundoplication. There was no blood loss and serious perioperative morbidity. One slipped Nissen was a result of a car accident and was reoperated successfully. One case presented with postoperative vomiting due to gastroparesis and was treated successfully by a gastrojejunostomy.

Conclusions: Robotic hiatal hernia repair is safe and efficient but failed to prove superiority to laparoscopic techniques in the existing literature. It has faster learning curves and it facilitates dissection and suturing of the crurae and fundoplication. These benefits might prove especially useful in complicated cases with giant paraesophageal hernias.

V201 - Video - Oesophageal and Oesophagogastric Junction Disorder

A Modified Technique to Create a Standardized Floppy Nissen Fundoplication Without a Bougie

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Background: Nissen fundoplication is the gold standard for treatment in patients with gastroesophageal reflux disease (GERD). A common complication of this procedure is persistent GERD or dysphagia. To reduce the risk of dysphagia some surgeons create the fundoplication over a bougie to assure enough patency. However the risk for perforation of the esophagus is real. Therefore, we have modified a previously described technique to create a standardized floppy fundoplication without the usage of a bougie.

Method: In this report, we describe a technique to create a standardized Nissen fundoplication. First we performed suture repair of the hiatal hernia. Subsequently we placed 3 marking sutures on the gastric fundus, based on an equilateral triangle. The size of this triangle determines the final diameter of the fundoplication. Due to these measurements, we ensure sufficient patency and minimize any rotation. Hypothetically this will reduce postoperative dysphagia and aid beginning surgeons to perform a proper floppy Nissen fundoplication.

Results: We have operated 15 consecutive patients with this technique. Median operative time was 69.5 min, no complications occurred and the mortality rate was zero. There was no early dysphagia and the mean length of stay was 1.3 day. (1–2) We compared our results with our retrospective cohort and found similar results. No statistically significant difference in quality of life was found after 1 year.

Conclusions: This procedure is safe and seems to reduce dysphagia in the early postoperative period. However, more research is necessary to prove the effectiveness and reproducibility of this technique.

V202 - Video - Oesophageal and Oesophagogastric Junction Disorder

Toracoscopic Enucleation of a Submucosal Oesophageal Lipoma

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Aims: case-report of a toracoscopic enucleation of esophageal lipoma. Lipomas of the gastrointestinal tract are rare, and those of the esophagus are extremely rare. Surgical enucleation is indicated in case of symptoms or an unclear diagnosis. Toracoscopic enucleation has been developed as a preferred approach for most lesions in recent years.

Methods: clinical data collected from computerized records of the patient process and records, video and photography from surgery. Literature review about this subject, using Pubmed search platform.

Results: The patient is a 68 years old man, diabetic and hypertense, presented with dysphagia associated with extrinsic compression impactation. Upper gastrointestinal endoscopy revealed a submucosal space-occupying mass, with normal mucosa, at 22 cm from upper dental arch. CT revealed a upper-medium 42×9×16 esophageal lipoma, with mass efect and luminal narrowing. In April 2016, the patient was submitted to a toracoscopic enucleation of the esophageal lipoma. The tumor location was identified, and the overlying muscle layer of the esophagus was incised to expose the tumor, which was completely enucleated. The surgery and post-operative period was uneventful. Histology confirmed the diagnosis of lipoma, comprising a collection of mature adipose tissue. The patient is currently asymptomatic.

Conclusions: Benign tumors of the esophagus are very rare. The treatment of suspected esophageal lipoma depends on tumor size and origin. Toracoscopic enucleation of esophageal lipomas is a safe, minimally invasive, and effective treatment. Although lipomas are rare in the esophagus, early diagnosis and resection should be recommended for all symptomatic cases.

V203 - Video - Oesophageal and Oesophagogastric Junction Disorder

Recurrent Giant Strangulated Paraesophageal Hernia: A Laparoscopic Approach to a Nissen Re-do Fundoplication with Mesh

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The recurrence rate of paraesophageal hernias (PEHs) range from 10 to 42% in the current literature. Mortality rates for emergency repair have been reported to range from 5 to 17%; however, related complications are known to be higher among elderly patients increasing operative mortality above 50%. We report a case of a successfully treated recurrent strangulated giant paraesophageal hernia in a critically ill patient. A 71 year-old male patient presented to the emergency department referring acute onset of severe abdominal pain. Past medical history included severe chronic gastroesophageal disease, metabolic syndrome, and a type IV paraesophageal hernia reduction and gastropexy two years prior to admission. An upper GI tract endoscopy and CT scan revealed a giant PEH with signs of gastric ischemia without necrosis or perforation. Patient was diagnosed with a recurrent paraesophageal strangulated hernia and was admitted to the intensive care unit. After adequate stabilization and nutritious support, a diagnostic laparoscopic with definitive treatment was performed. Hernia contents included 100% of the stomach and part of the large omentum. Dense adhesions caused a partial mesenteroaxial rotation of the stomach inside the thorax consistent with a gastric volvulus. After complex dissection, lysis of adhesions, and complete reduction of hernia contents, a Nissen re-do fundoplication with mesh reinforced cruroplasty was completed. Total operative time was 258 min. Patient was transferred to the intensive care unit for continued monitoring. Postoperative status showed expected dysphagia without hernia recurrence. No mesh related complications were reported at follow-up. The standard for repair for PEHs is a laparoscopic approach as long as there are no signs of peritoneal contamination or gastric necrosis. Laparoscopic repair of recurrent acute paraesophageal hernia is feasible under experienced hands and after adequate patient preparation. A strangulated paraesophageal hernia poses a surgical emergency and a higher challenge for a definitive treatment. The advantages of laparoscopy are especially valuable in complicated PEHs because most patients are elderly and have multiple comorbid conditions.

V204 - Video - Oesophageal and Oesophagogastric Junction Disorder

Right Thoraco-Laparoscopic Approach for Surgical Treatment of Esophago-Gastric Junctional Cancer

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Aim: Esophagogastric junction (EGJ) cancer is issue both for the gastric and eshophageal surgeon. The optimal extent of esophagogastric resection for the tumor is still controversial. We have performed right thoraco-laparoscopic approach (RTL) for EGJ cancer to obtain safety resection margin, surely lymphadenectomy and reconstruction. The surgical technique and its early clinical outcome is demonstrated.

Method: Indication of RTL is EGJ cancer which is categorized in Siewert type I and II, including Barrett's esophageal cancer. The concept of RTL is to obtain safety resection margin, surely lymphadenectomy and reconstruction, thus the indication depends on them. In this paper, the technical tips of RTL is demonstrated and its validity is evaluated. Thoracoscopic esophagectomy by prone position: Using six ports, middle and lower mediastinum lymphadenectomy is carried out. Esophagus is transected at the proper location which gets secure surgical margin. Then, Laparoscopic proximal gastrectomy is done in spinal position. Gastric tube is made through umbilical ports and replaced into abdominal cavity. Finally intrathoracic reconstruction is carried out again by prone position. Esophagojejunosotomy is done by overlap method using liner stapler.

Results: We have had 20 cases of RTL in total. The median operation time was 312 min. The median bleeding was 75 g. There were three complications of anastomotic dehiscence (1 case) and anastomotic stenosis (2 case). There was no motality.

Conclusion: Our experience of RTL is still few. However, it can be one of the option for the surgical treatment of EGJ cancer to obtain safety resection margin, surely lymphadenectomy and reconstruction.

V205 - Video - Oesophageal and Oesophagogastric Junction Disorder

Laparoscopic Repair of Large Hiatal Hernia: Nissen Fundoplication

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Aim of the study: The video shows safeness and feasibility of laparoscopic nissen fundoplication for treatment of the hiatal hernia.

Methods: Hiatal hernia is a common condition often associated with symptomatic gastroesophageal reflux disease. Laparoscopic hiatal hernia repair is now an established operative management and, compared with the open approach, is associated with reduced rate of perioperative morbidity and shorter hospital stay. The video shows laparoscopic nissen fundoplication performed in a 80 years old patient complaining of pirosis and regurgitation of several years duration, resistant to medical therapy, affected by a sliding type cardiofundal hiatal hernia confirmed at CT scan.

Results: Post-operative course was uneventful, soft diet was tolerated in 2nd pod and patient was discharged on 4th pod. At the time, the patient does not complain any symptoms.

Conclusions: Minimally invasive repair of large hiatal hernias is challenging and requires advanced laparoscopic skills. We believe that this procedure should be considered the gold standard.

V206 - Video - Oesophageal and Oesophagogastric Junction Disorder

An Option for the Treatment of Hiatal Hernia and Gastroesophageal Reflux After Sleeve Gastrectomy - Narbona - Arnau Laparoscopic Technique

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Background: Laparoscopic sleeve gastrectomy (LSG) is an effective bariatric procedure, increasingly performed more often during the last years. Up to 50% of obese patients before surgery have gastroesophageal reflux disease (GERD) and hiatal hernia (HH). After the LSG alone or associated with calibration of the esophageal hiatus, the GERD /HH control is acceptable. But, for some patients, the reflux symptoms worsen postoperatively due to development of a HH or due to the recurrence of the HH previously repaired within the same intervention with LSG. For these situations, when the conservative treatment fails, there are proposed surgical solutions such as Roux- en-Y gastric bypass, Cardiopexy with Teres ligament - Narbona Arnau technique or LINX procedure.

Objective: This video highlights the anatomical landmarks after primary sleeve gastrectomy and the technical particularities of performing a cardiopexy using the teres ligament (Narbona Arnau technique).

Methods: We present data and technical aspects from our experience from the last 2 years, which consists of 21 cases of laparoscopic Narbona -Arnau procedure after LSG. Preoperative investigations were the blood tests, upper gastrointestinal endoscopy, radiological contrast study, pH - metry, computed tomography with oral contrast. For all 21 patients GERD and HH were preoperatively documented. The surgical technique and the particular aspects are presented during the video.

Results: There were no incidents during surgery .The postoperative outcome was favorable with rapid tolerance for liquids, except 4 patients who developed an acute stenosis which was remitted in 48 to 72 h (therapeutic attitude consisted of stopping the fluid intake, decompresion of the stomach with a nasogastric tube, proton - pump inhibitors (PPI), anti-inflammatory medication). Postoperative follow up period was 3 months to 24 months. In the postoperative course, GERD symptoms persists for 3 patients who required occasionally treatment with PPIs. No objective signs of hiatal hernia recurrence at imagistic investigations and upper gastrointestinal endoscopy were encountered.

Conclusions: Laparoscopic cardiopexy with teres ligament - Narbona Arnau technique - after sleeve gastrectomy is feasible and it seems that is a good option for the treatment of severe GERD with poor PPI medication control after laparoscopic sleeve gastrectomy.

V207 - Video - Oesophageal and Oesophagogastric Junction Disorder

Laparoscopic Esophageal Diverticulectomy and Long Myotomy for achalasia

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Epiphrenic diverticula are found adjacent to the diaphragm in the distal third of the esophagus. They are false diverticula that often are related to achalasia and diffuse esophageal spasm.

The laparoscopic approach is ideal for the surgical treatment of this pathology. The esophageal hiatus is approached, the distal esophagus is mobilized and the diverticula is identified and cleared from the surrounding tissue to expose the mucosa at the neck of the diverticula. A linear stapler is used to excise the diverticula. A long myotomy is then performed on the opposite site of the esophagus, the hiatus is closed and a partial fundoplication is performed.

This video shows in details the preoperative evaluation and the surgical technique in an 83 year old female patient with a large epiphrenic diverticulum and achalasia.

V208 - Video - Oesophageal and Oesophagogastric Junction Disorder

LAPAROSCOPIC TRANS HIATAL ESOPHAGECTOMY

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Aim: Esophagectomy for esophageal carcinoma post chemo and radiation therapy is a complicated surgery associated with morbidity and mortality and prolonged hospital stay.

Methods: This video will show the steps used for trans hiatal esophagectomy with lymph node dissection and esophago gastrostomy using EEA stapler.

Results: Patient did well post operation and discharged 10 days post surgery.

Conclusion: This approach will render this complicated surgery into a procedure that can be tolerated by the patient with minimal morbidity and preserving all onchological principles.

V209 - Video - Oesophageal and Oesophagogastric Junction Disorder

World's First Transoral Incisionless Fundoplication with Esophyx 'Z'®for Recurent Gerd, 7 Years After TIF With Esophyx 2®

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Transoral Incisionless Fundoplication (TIF) with EsophyX device for a well selected GERD patient population has proven its efficiency, safety and durability.

We present a case report of a male, 63 y old, with typical and atypical GERD symptoms started 15 years ago. The esophagogastroduodenoscopy (EGD) showed a Hiatal Hernia of 3 cm and an erosive esophagitis Los Angeles Grade B.

The first surgery was performed 7 years ago: a TIF with the EsophyX 2 device (EndoGastric Solution, Inc., Redmond, WA, United States). Post-surgery symptoms were controlled, completely eliminated, the EGD showing the healing of the esophagitis. Six years after the surgery the sore throat re-appears, while the EGD shows a 2 cm hiatal hernia and erosive esophagitis Los Angeles Grade A. The Impedance pH-metry confirms GERD with a DeMeester score of 44.5.

In 2016 (7 years after first procedure) a second TIF 2.0 procedure, this time with EsophyX Z device is performed. The EsophyX Z device is an automatic stapler-like fastener delivery system, easier of use, faster, safer and more reproducible (standardized fastener delivery). The time of the procedure was significantly reduced, compared to first procedure.The patient is now symptom free, EGD is normal, the pH significantly improved.

This is a World's first case report of a TIF 2.0 procedure with EsophyX Z device 7 years after a first TIF procedure with EsophyX 2 device. We present the video with both surgeries performed.

V210 - Video - Oesophageal and Oesophagogastric Junction Disorder

Laparoscopic Revisional Hiatal Hernia Biologic Mesh Repair and Redo Nissen Fundoplication - Video Presentation and Review of Literature

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Background: Patient satisfaction with primary laparoscopic antireflux surgery is high, but a smalpercentage of patients experience recurrent symptoms, which may necessitate revisional surgery. The major anatomic causes of failed fundoplication are slipped fundoplication, failure to identify a short esophagus, and problems with the wrap.

Methods: The fundamental steps of laparoscopic repair include adequate mediastinal mobilization of the esophagus, tension-free approximation of the diaphragmatic crura, and gastric fundoplication. Collis gastroplasty, mesh reinforcement, use of relaxing incisions, anterior gastropexy, and other rarer reinforcement techniques (teres ligament hiatoplasty, and autologous fascia lata graft hiatoplasty..) are just a few adjuncts to basic principles that can be utilized and have been widely studied in recent years. In this video, these steps are demonstrated, delicate mediastinal mobilization of the esophagus and intrathoracic stomach, posterior suturing of the hernial defect reinforced by a biologic mesh Permacol(®), and reaffection of the sliding wrap were done.

Results: 2 years postoperative follow-up free of preoperative symptoms and a patient high satisfaction with the operation was achieved. The application of mesh-reinforced hiatal closure has resulted in a significant reduction in recurrence rates in comparison with primary suture repair. Biological mesh is used to prevent long-term side effects of artificial meshes and to reduce recurrence rates.

Conclusion: Laparoscopic reoperative antireflux surgery with biologic mesh repair is a safe procedure with very good clinical outcomes, high patient satisfaction and low morbidity.

V211 - Video - Oesophageal and Oesophagogastric Junction Disorder

Laparoscopis Correction of the Recurrence of the Gastroezophagial Reflux Disease and Hiatal Hernia of the Aperture

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Objective: To evaluate the effectivness of laparoscopic operations in the treatment of recurrences of the gastroezophagial reflux diseases (GERD) and hiatal hernia (HH).

Materials and Methods: 1750 patients with GERD and HH were operated from 1993 to 2017. 75 (4,5%) patients underwent their surgeries about recurrent forms of the disease. 10 of them were operated about repeated recurrences from 3 to 6 times. 51 cases of recurrences which were provided by the authors occurred after primary operations conducted by them.

Results: Any radiologically confirmed case of the re-herniation accompanied by any dyspeptic manifestations or complaints due to the compression of the mediastinum and asymptomatic paraesophageal hernias was considered by the authors as the indication for the repeated operation about the recurrence HH. Asymptomatic instrumental confirmed recurrent axial hernia were no indication for surgical correction.

Dyspeptic symptoms disrupted quality of life with instrumental confirmed objective functional changes and also identified structural changes of the mucosa of the esophagus were considered as indication for the surgical treatment of the GERD recurrence.

The structure of surgical interventions about the GERD and HH recurrences: front crurorophy –5, rear crurorophy –45, crurorophy with alloplasty (mesh Parietex) –21, turning the fundoplication Nissen-Rosetti and Nissen into Toupet –8, turning the fundoplication Nissen-Rosetti into Short floppy Nissen –41 and turning the fundoplication Nissen-Rosetti into Toupet –7, turning the fundoplication Toupet into the fundoplication by Chernousov −5. 88% of patients improved quality of life after re-operations. 12% of patients needed re-operations (about the persistent dysphagia 4, the peptic structure of the esophagus 1 and Barrett's esophagus 1) within the next two years.

Insights: The success of treatment of the recurrent GERD and HH depends on the compliance of the following conditions: the identification of clear indications for re-operation which are based not only on subjective manifestations but mainly on objective instrumental confirmed changes; multidisciplinary approach; the choice of the method of surgical correction is determined individually and is based on the results of the preoperative instrumental examination and intraoperatively identified anatomotopographic and structural features of the operation area, as well.

V212 - Video - Oesophageal and Oesophagogastric Junction Disorder

Laparoscopic Redo Nissen Fundoplication: A Minimally Invasive Approach to Failed Antireflux Surgery

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Aims: A laparoscopic total fundoplication is very successful for the treatment of patients with gastroesophageal reflux disease (GERD). However, recurrence of symptoms occurs in about 15% of patients. Laparoscopic redo anti-reflux surgery has similar success rate when compared to open surgery, but early postoperative course is improved. In this video, we present the laparoscopic approach for the repair of a failed laparoscopic fundoplication.

Methods: The video shows the case of a 39-year old male patient who experienced recurrence of typical symptoms 12 years after a laparoscopic fundoplication for acid GERD. A thorough evaluation of symptoms, anatomy, esophageal motility and reflux profile revealed the presence of heartburn and regurgitation that were only partially controlled with medical therapy, a small hiatal hernia associated with distal esophagitis, hypotensive LES and pathologic esophageal exposure to acid refluxate.

Results: Five trocars were used. After insertion of the camera, a small hiatal hernia was detected. The wrap appeared completely disrupted, and the non-absorbable sutures used during the previous operation were removed. The right and left pillars of the crus were then completely dissected. At this point, the esophagus appeared completely reduced in the abdomen. A total of 3 interrupted 2–0 non-absorbable sutures where then tied extracorporeally to close the diaphragmatic crura. After the transoral insertion of a 36- French Bougie down the esophagus through the esophagogastric junction, the left and right sides of the fundus were wrapped above the esophagogastric junction to construct a total fundoplication. The two edges of the wrap are secured to each other by three 3–0 non-absorbable sutures about 1 cm apart from each other. The postoperative course was uneventful and the patient was discharged on postoperative day 3. At one month after surgery, the patient is asymptomatic.

Conclusion(s): The laparoscopic approach is safe and effective for the management of patients with recurrent symptoms after failed fundoplication.

V213 - Video - Oesophageal and Oesophagogastric Junction Disorder

Perforated Gastric Volvulus After Laparoscopic Large Hiatal Hernia Repair and Nissen Fundoplication: Laparoscopic Management of a Rare Complication

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Aims: Acute gastric volvulus is a rare complication occurring after laparoscopic anti-reflux surgery. The aim of this video is to present the laparoscopic management of perforated gastric volvulus after laparoscopic Nissen fundoplication.

Methods: A 73-year-old woman presented with acute abdomen secondary to gastric perforation 10 days after laparoscopic large hiatal hernia repair with mesh and Nissen fundoplication. A CT scan showed a large amount of free air in the abdomen and huge dilatation of the entire stomach with a large air-fluid level. Duodenum, small bowel and colon were not dilated. The patient underwent laparoscopic suture of a burst tear of the gastric fundus and gastropexy.

Results: Five trocars were used. After insertion of the camera with the open technique in the left flank, huge dilatation of the entire stomach secondary to a gastric volvulus along the axis of the pylorus was detected. No free liquid and no signs of peritonitis were found in the abdomen. Four more trocars were placed. The operation started with the lysis of adhesions between the wrap and the left lobe of the liver. At this point, a 2-cm long burst tear of the gastric fundus previously used to construct the anti-reflux wrap was found. After suction of a large amount of fluids from the stomach, the gastric perforation was closed with a double-layer of interrupted 3–0 absorbable sutures. A gastropexy was then performed placing interrupted 3–0 non-absorbable sutures between the anterior wall of the stomach and the peritoneum. Two drainage tubes were left close to the gastric suture. The postoperative course was uneventful and the patient was discharged on postoperative day 6.

Conclusion: The laparoscopic approach is safe and effective for the treatment of acute complications after laparoscopic anti-reflux procedures, such as perforated gastric volvulus.

V214 - Video - Oesophageal and Oesophagogastric Junction Disorder

The Redo Laparoscopic Esophagocardiomyotomy in Patient with Stage 2–3 Achalasia After Previous Ineffective Attempt

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Background: Currently the esophagocardiomyotomy is the treatment of choice in patients with achalasia. In the department of Surgical Endoscopy in A.V. Vishnevsky Institute of surgery we do perform all the types of minimally–invasive procedures for achalasia (balloon cardiodilation, POEM, laparoscopic esophagocardiomyotomy).

Objective: To demonstrate the efficiency of redo laparoscopic cardiomyotomy after previous ineffective attempt via open approach with technique failure.

Material and method: Patient is man, 35 y.o., with complains of dysphagia for the last 4 years. After investigastion with upper GI endoscopy and barium swallow the diagnosis of achalasia was made and he the Geller cardiomyotomy via open approach was done. The post-op period was uneventful, but no clinical effect was achieved. The patient was investigated in our institution with upper GI Endoscopy and CT with significant dilation of esophagus and blockage at the level of cardia on investigations. Given the results of the studies and clinical symptoms of dysphagia the ineffective first surgery was suspected with failure of technical aspects of operation – insufficient myotomy of lower esophageal sphincter. For that reason the redo laparoscopic Geller was done.

Intraoperatively the fundoplication wrap was broken up, and no signs of myotomy was found with integrity maintenance of lower esophageal sphincter muscles. The adequate esophagocardiomyotomy was performed completed with anterior Dor fundoplication. The post-op period was uneventful. The follow-up water-soluble contrast study on the next post-op day proved adequate passage of contrast through EG junction. The follow-up 3 months after surgery showed normal endoscopic image with no symptoms of dysphagia.

Conclusion: The evaluation of previous surgical attempts in patients with achalasia shows that uneffectiveness usually associated with technical failure and redo surgery with adequate myotomy of lower esophageal sphincter provides a good clinical result in patients with stage 2–3 achalasia.

V215 - Video - Oesophageal and Oesophagogastric Junction Disorder

Laparoscopic Heller Esophagomyotomy with DOR Fundoplication. The Gold Standard Technique for Chronic Achalasia After Unsuccessful Balloon Dilatations

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Background: The esophageal achalasia is a rare surgical entity of 0.5% incidence. Common cause relates to Chagas disease. Other causes are idiopathic destruction of esophageal nerve plexus. Endoscopic techniques like dilatations can be considered as temporary solutions due to high relapse rate and high risk of esophageal rupture. Furthermore dilatations can cause fibrosis of the lower esophageal sphincter, that complicate surgical myotomy.

Aim: To present the Gold Standard technique of wide esophagomyotomy with additional Dor fundoplication anchored on the right and left bundles of the right crus of the diaphragm.

Case report: Male patient 52 years old with a history of chronic esophageal achalasia treated with unsuccessful balloon dilations complains for insisting symptoms of dysphagia and regurgitation. On the endoscopy esophagitis is still present and on the upper esophageal series sigmoid esophagus is demonstrated. Laparoscopic management is decided.

Results: While wide esophagomyotomy has been carried out through the esophagus, there was quite difficulty at the level of the Z-line due to thick fibrotic tissue that has been developed through previous multiple dilatations. The Dor fundoplication is partially anchored on the esophageal crus of the diaphragm. Upper GI contrast series 24 h postoperatively confirmed easy promotion of contrast without stopping in the esophagus. The patient experienced complete resolution of dysphagia symptoms and was discharged from hospital on day 4.

Conclusions: In patients with achalasia and history of failed esophageal dilatation, further difficult in esophagomyotomy at the level of LES is expected. Upper GI contrast series postoperatively may be unnecessary if no clinical symptoms of dysphagia are present. The technique of anchoring fundoplication on the diaphragm is imperative.

V216 - Video - Oesophageal and Oesophagogastric Junction Disorder

Laparoscopic and Thoracoscopic Totally Esophago-Gastrectomy for Junctional ESO-Cardial Neoplasm

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Aims: The advantage of laparoscopic and thoracoscopic approach for esocardial neoplasm. Material and method Male patient, 65 with T3N2Mo eso-gastric neoplasm has been operated using the endoscopic approach: laparoscopic and thoracoscopic during 8.5 h.

Results: The patient has 8 days of hospital stay fully recovered in 7 days, no complication appeared.

Conclusion: The endoscopic approach has an evident advantage for the patient reducing the risk of postoperative complications especially the pulmonary ones related to classical thoracotomy.

V217 - Video - Oesophageal and Oesophagogastric Junction Disorder

The EndoStim-System as an Alternative in Patients Without Gastric Funds and Gerd

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Introduction: There are three major patient groups with GERD that are very difficult to treat because of anatomical modifications made to their gastric fundus. The first group consists of patients that had sleeve gastrectomy and resection of their gastric fundus as part of the operation. The second group are patients that had esophageal atresia and needed reconstructive surgery as a child and the third group are patients that lost the fundus because of a perforation or necrosis.

Patients and Methods: Naturally in all patient groups there is no fundus anymore to do a fundoplication that is considered the golden standard nowadays. The EndoStim-System consists of two stimulator electrodes that are placed at the esophagosgastric junction. These electrodes are connected to a stimulating device that is implanted subcutaneous. The exact mode of action is not fully understood until now but some promising results were documented by different research groups. The presentation will focus on a patient who lost his gastric fundus after a fundoplication and an emergency redo-operation in another hospital. He presented to our department with a deMeester score of 117 and a significantly reduced quality of life. The video presentation will involve the operation, the preoperative period and the follow-up of the patient that does not need any antacids nine months after the operation.

Conclusion: A stimulator device of the lower esophageal sphincter may be a promising alternative in the surgical treatment of patients with GERD and no gastric fundus.

V218 - Video - Oesophageal and Oesophagogastric Junction Disorder

Securing The Margins: Endoscopic Assistance for Laparoscopic Gastric GIST Resection

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Introduction: Gastrointestinal stromal tumours (GIST) are the most frequently found mesenchymal tumours of the gastrointestinal tract and occur most frequently in the stomach. The treatment of choice is complete resection with clear margins without lymphadenectomy as the tumour rarely spreads via submucosal infiltration or lymphatics. Laparoscopic gastric wedge resection instead of traditional open gastric wedge resection has been well established by numerous case series and systematic reviews.

Accurately determining the tumor's location is often difficult when using a laparoscopic approach, and sometimes it is necessary to resect large sections of healthy stomach.

Methods: A 72 year-old woman was diagnosed of gastric GIST and treated with Imatinib for 6 months with partial response. The tumour was located in the greater curvature near the esophagogastric junction and had a complete endoluminal growth. A combined laparoscopic and endoscopic approach was proposed.

Methods: Endoscopy showed a pediculated tumour in the greater curvature near the esophagogastric junction. The endoscopic vision allowed adjusting the resection to the tumor itself and thus reduce the extent of the gastric resection. The endoscope was used as a probe to prevent stenosis. A hiatal hernia was diagnosed during the procedure and the diaphragmatic pillars were closed.

Conclusion: Combined laparoscopic and endoscopic approach to endoluminal gastric GIST is useful to locate the tumor and delimitate the extent of the resection.

V219 - Video - Oesophageal Malignancies

Total Minimally Invasive Esophagectomy with Simplified Linear Stapler Esophagogastrostomy - Video Presentation and Preliminary Results

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Aim: Minimally invasive esophagectomy is associated with better perioperative outcome than open esophagectomy. However, it is demanding and, particularly, the minimally invasive intrathoracic anastomosis is technically challenging. The aim of this presentation was to demonstrate the crucial steps of a total minimally invasive esophagectomy with special focus on a simplified method to perform the esophagogastrostomy.

Method: Video presentation of a total minimally invasive esophagectomy with linear stapler esophagogastrostomy, which is performed through two small incisions, one in the staple line of the esophageal stump and one in the anterior wall of the stomach 3 cm from the margin. The closure of the remaining esophagogastric hole after stapling is done by a transversal running suture.

Results: Twenty unselected patients with esophageal cancer have undergone the presented method at our institution. The mean operating time was 492 min. All tumors were resected completely (R0). The mean number of harvested lymph nodes was 23. Complication rate was 25%, anastomotic leakage rate 5% and mortality zero. Mean postoperative stay was 14 days.

Conclusion: Total minimally invasive esophagectomy with linear stapler esophagogastrostomy can be done in a simplified manner and with good perioperative outcome.

V220 - Video - Oesophageal Malignancies

Usefulness of Intraoperative ICG Blood Flow Evaluation of Gastric Tube in Transhiatal Esophagectomy

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ICG blood flow evaluation of gastric tube can be useful to decide the level of anastomoses in order to reduce postoperative anastomotic leakage. In this video we present the technique of intraoperative ICG blood flow evaluation of gastric tube in a case of squamous carcinoma of low esophagus (cT3N0M0). Transhiatal esophagectomy was performed after neoadjuvance with quimio-radiotherapy (CROSS) in a high risk patient due to respiratory pathology. After dissection of stomach, a firs evaluation was performed and a second control after gastric tube prepared, without significant differences in both cases. Posteriorly, once the cervical dissection with total mobilization and section of cervical esophagus was performed, a last ICG blood flow evaluation is performed and anastomoses visualized. This study can be used in doubtful situations and doesn't represent a significant increase of operative time.

V221 - Video - Oesophageal Malignancies

Minimally Invasive Esophagectomy with Preservation of the Vascular Supply at the Lesser Curvature to Improve the Vascular Supply of the Gastric Tube

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Aims: To evaluate the feasibility and results of minimally invasive esophagectomy with preservation of the vascular arcade of the lesser curvature performed by a complete minimally invasive approach.

Methods: The patient is positioned in a supine position and the laparoscopic mobilisation of the stomach is performed. The D2-Lymphadenectomy is made as usual. Nevertheless, the right gastric artery is preserved and dissected free along the lesser curvature in order to improve the vascular supply of the gastric tube. At the junction between the antrum and the body of the stomach the anastomotic connection between right and left gastric artery is divided and the lymphadenectomy is completed as usual along the hepatic and splenic artery. The left gastric artery and vein are clipped at their origin. Intraoperative evaluation of the perfusion can be performed with Indocyanine green (ICG). After creation of the gastric tube the patient position is modified and a right thoracoscopy is performed. The Ivor-Lewis esophagectomy is completed by the minimally invasive approach.

Result: The video demonstrates the key-points of the operation, focusing on the laparoscopic dissection of the stomach and on the lymphadenectomy with preservation of the blood supply at the lesser curvature. The anastomosis is performed through a 2 to 3 cm mini-thoracotomy by an end-to-side technique. The postoperative course was uneventful.

Conclusion: The modified dissection of the stomach is feasible by the laparoscopic approach, guaranties an excellent vascularization of the gastric tube and do not compromise the extent of lymphadenectomy.

V222 - Video - Oesophageal Malignancies

Minimal Invasive Placement OF A Jejunostomy Tube IN Patients WITH Esophagogastric Cancer

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With the introduction of minimal invasive surgery for upper gastrointestinal malignancies, there is an ongoing need for a laparoscopic placement of a jejunostomy tube. In our hospital a jejunostomy tube is placed laparoscopically during the abdominal phase of the thoracolaparoscopic esophagectomy and, if indicated, during staging laparoscopy in case of gastric cancer. We describe the new technique of the laparoscopic placement of a jejunostomy tube. A video with the technical aspects of placement of the jejunostomy tube will be shown. A retrospective review of all medical files was performed in 84 consecutive patients who underwent a minimal invasive esophagectomy for esophageal cancer between January 2015 and April 2016. Outcome measures that were recorded included peroperative complications, postoperative complications (mortality, wound infection, catheter obstruction/luxation, malfunction, ileus) In 83 patients jejunostomy tube placement was successful, in 1 patient no jejunostomy tube could be placed due to intra abdominal adhesions. There was no conversion to open surgery and no peri-operative complications documented. Postoperative complications were: dislodgement of the tube in 7 cases (8%). In 1 case tube obstruction was reported 3 days after surgery. Wound infections of the abdominal wall occurred In 5 cases (6%). On average the nutritional goals were accomplished on the third postoperative day (mean 1.5 L of enteral nutrition), there was no mortality related to the complications associated with the jejunostomy.

Conclusion: Jejunostomy tube feeding is a well established method for administrating enteral nutrition in the early postoperative phase. We demonstrate a new minimal invasive placement of the jejunostomy. The technique is easy to learn and we conclude that it is a safe method for laparoscopic placement of a jejunostomy tube.

V223 - Video - Oesophageal Malignancies

Intrathoracic Esophagogastric Anastomosis in Prone Position

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Aims: The purpose of this video is to describe our usual technique for thoracoscopic construction of an intrathoracic esophagogastrostomy in the Ivor-Lewis esophagectomy, using a hand sewn double layer of Stratafix™ and Ethibond® sutures.

Methods: Single case report of a 35 year old male with a distal esophageal tumor found 35 cm from the upper incisors on esophagogastroduodenoscopy. The histologic examination revealed a poorly differentiated carcinoma. It was categorized by endoscopic ultrasound as uT3N1 with evidence of celiac trunk lymphadenopathies on PET/CT scan. After neoadjuvant chemoradiotherapy, the patient was proposed to surgery.

Results: After an open abdominal phase, we performed a thoracoscopic Ivor-Lewis esophagectomy with the patient in prone position. Once the esophagus was mobilized, and the distal esophagus and stomach were brought into the chest, it was transected at the azygos vein level. We performed an end to end hand sewn double layer endothoracic esophagogastric anastomosis, using Stratafix™ and Ethibond® sutures. The specimen was extracted through an enlarged intercostal port site using a laparoscopic wound protector. Two chest tubes were left.

Conclusion: There are several surgical options to perform the esophagogastric anastomosis after a esophagectomy. Intrathoracic esophagogastrostomy in the Ivor-Lewis esophagectomy, using a hand sewn double layer of Stratafix™ and Ethibond® sutures, is a challenging procedure. However, it is feasible and reproducible.

V224 - Video - Oesophageal Malignancies

Thoracoscopic Esophagectomy in the Prone Position with Mechanical Side-to-Side ESO-Gastric Anastomosis During Lewis-Santy Procedure: How We Do It?

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Aim: Laparoscopic Lewis-Santy procedure has been described as a feasible and safe technique. The prone positioning technique allows optimal exposure of the esophagus. Single-lung ventilation is not required, allowing a better ventilatory capacity and enhances patient recovery. Eso-gastric anastomosis remains the main limit of this minimally invasive procedure. This didactic video clearly describes the technique of thoracoscopic esophagectomy in the prone position with a mechanical side-to-side eso-gastric anastomosis.

Method: The patient is a 44-year-old man undergoing a subtotal esophagectomy for an adenocarcinoma of the eso-gastric junction after neoadjuvant chemo-radiotherapy. After laparoscopic gastric tubulisation in supine position (not shown), the patient was installed in prone position and esophagectomy with lymphadenectomy was progressively performed using three trocars : one 10-mm port for the 0° scope and two 12-mm ports in the 5, 7 and 9 intercostal spaces on the posterior axillary line. After checking the good ascension of the gastroplasty, the esophagus then the stomach were sectioned using a linear stapler. A small seromuscular incision was made on the esophagus and gastroplasty. Eso-gastric reconstruction was achieved by a mechanical side-to-side anastomosis using linear stapler. A trans-anastomotic nasogastric tube was positioned and the eso-gastrotomy was closed by V-loc ™suture. The specimen was inserted into a bag and extracted through a mini-thoracotomy on the optical port site, which was expanded slightly to 4 cm. Two 20-French thoracic drains were placed inside the pleural space.

Results: This surgical procedure lasted 230 min with minimal blood loss. The patient was extubated after the operation. The contrast medium swallow on postoperative day 5 showed good clearance of the eso-gastric anastomosis without leak. After an uneventful postoperative course, the patient was discharged at postoperative day 11. Pathology confirmed a R0 resection of a poor prognosis adenocarcinoma T3N3 with 7 positive lymph nodes on 24 analyzed.

Conclusion: After more than 20 laparoscopic Lewis-Santy procedures with thoracoscopy in the prone position by our team and evaluation of several techniques for thoracoscopic reconstruction, we adopted the mechanical side-to-side eso-gastric anastomosis that is a safe, ergonomic and reproducible technique.

V225 - Video - Pancreas

Distal Pancreatectomy with Splenectomy for Distal Intraductal Papillary Neoplasm: A Case Report

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Aims: Intraductal papillary neoplasms of the pancreas belong to the heterogeneous group of cystic pancreatic lesions and have been diagnosed more frequently in recent years. These lesions are considered as precursor lesions for the development of invasive pancreatic cancer. Early diagnosis and selection of the appropriate therapeutic strategy is necessary for optimal outcome and cure.

Methods: We report a 44-years-old women who presented back pain and gastric discomfort for six months. The computed tomography and magnetic resonance showed as an incidental finding a pancreatic cyst lesion located in the tail of the pancreas, which probably communicated with the main pancreatic duct. The size of the tumor was 5 cm which was initially thought to be a pancreatic cystic neoplasia. She underwent distal pancreatectomy with splenectomy. Her post-operative course was uneventful and histopathological examination revealed aIntraductal papillary neoplasmsin the pancreatic tail and no lymph nodes affected.

Conclusions: Intraductal papillar neoplasms is a disease associated with a field defect. For multilesion disease, every cyst should be a risk-stratified individually, and cyst-specific segmental resection performed when indicate. Follow-up after resection should be pursued, even if it was for benign lesion, given the risk of recurrence in the remnat gland. There are no high-level data supporting the use of adjuvant chemotherapy or radiation for invasive tumors. The approach laparoscopic has a lot of advantages in selected patients.

V226 - Video - Pancreas

Robotic Pancreatic Surgery: Is Really Helpful?

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Aims: Despite the potential benefits of robotic approach in pancreatic surgery are known since its first description in 1993, the worldwide acceptance is still poor. The complexity of the procedures associated with the low experience in mininvasive pancreatic surgery can justify the skepticism due to the potential fatal complications; we investigated the perioperative outcomes in our initial experience in robotic surgery.

Methods: We performed a restrospective analysis from January 2012 to September 2016 of our prospectively maintained database on robotic pancreatic surgery.

Results: A total of 38 patients (20 male–18 female) during the time period evaluated underwent to robotic assisted pancreatic surgery. The overall operative time was 425 ±140 min with a reduction over the course of learning curve, while the median blood loss was 150 ml (70–600). We observed 12/38 (31.6%) overall postoperative morbidity, but fortunately only 5 of these (13.1%) belonged to groups III-V according to Clavien-Dindo score. The pancreatic fistula rate was 7/38 (18.4%): 3 in the Distal Pancreatectomy group, 2 in the PancreaticoDuodenectomy (PD) and 2 in the enucleation cohort. The reoperation rate for all series was 3/38 (7.9%) all in the PD group. We had 1 case of 30-day postoperative mortality in the PD group.

Conclusion: According to our series, the robotic approach seems to be safe and effective giving short terms benefits in terms of estimated blood loss and conversion rate. The serious complication rate is acceptable and tends to reduce thanks to the faster learning curve, the potential advantages of the robotic platform in terms of oncologic outcomes as well as the cost-effectiveness of this approach needs further investigations.

V227 - Video - Pancreas

Laparoscopic Beger Procedure for Patients with Chronic Pancreatitis

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Aim: To demonstrate the first experience of laparoscopic Beger procedure.

Materials and Methods: From March 2016 to June 2016 laparoscopic Beger procedure were performed in 2 patients (male) with chronic pancreatitis type C (classification of M.Buchler).

The age of the patients was 54 and 64 years. The size of the pancreatic head was 24 and 34 mm, the diameter of the main pancreatic duct was 9 and 13 mm.

Operative technique: After the pancreas mobilization and visualization of vena mesanterica superior the head of the pancreas was stitched with the stay sutures for the traction. The pancreas was transected in the isthmus zone and the head of the pancreas was resected. The main pancreatic duct was opened longitudinally with an active branch of the Harmonic scalpel. A side-to-end and side-to-side pancreaticojejunoanastomosis was formed with single-layer continuous sutures using nonabsorbable materials.

Results: The operating time was 490 and 680 min. Blood loss was 100 and 250 ml. There was no conversion and complications in post-operative period. The length of postoperative days was 3 and 5 days.

Conclusions: The laparoscopic Beger procedure for the chronic pancreatitis are safe and feasible in selective cases in high volume centre.

V228 - Video - Pancreas

Laparoscopic Reconstruction After Pancreaticoduodenectomy : How We Do It

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Aims: We would like to describe our technique for the laparoscopic reconstruction of the digestive tract continuity after pancreaticoduodenectomy. The particularity of the case we use to illustrate our technique is an anatomic variant marked by the absence of a common hepatic duct.

Methods: Combining our experience in digestive tract anastomoses using a continuous barbed suture and our experience in laparoscopic pancreatic surgery, and after a careful review of the literature regarding the use of barbed sutures in pancreato-jejunostomies our group now performs the reconstruction after pancreaticoduodenectomy using continuous barbed sutures for both the pancreaticojejunostomy and for the gastro-jejunostomy. This brings us the advantages of gaining operative-time and facilitating and standardizing the surgical procedure without any negative effect on patient safety, from our experience.

Results: During the presentation particular technical aspects of the anastomoses will be detailed and for each anastomosis relevant data from the current literature will be brought into discussion.

Conclusion: We consider that our technique of reconstruction is simple and reproducible which makes it easy to learn and easy to teach for surgeons already having experience in laparoscopic surgery and is a safe procedure for the patient.

V229 - Video - Pancreas

Laparoscopic Duct-to-Mucosa Pancreaticojejunostomy with Dual Retraction Technique

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Aim: Pancreticojejunostomy (PJ) is a difficult procedure to perform laparoscopically and an obstacle for laparoscopic pancreatoduodenectomy (PD). In open surgery, we can change the position to make a best angle for suture and anastomosis, however, we could not in laparoscopic surgery. The range of articulation angle is limited and exact hand-eye coordination skill is essential to make the anastomosis securely.

Methods: Dual retraction method is designed to overcome the problem. The assistant surgeon pool, push or rotate the pancreatic stump to make the best position for PJ anastomosis. Two tagging sutures were placed at both upper and lower part of the remnant pancreas. The 1st assistant made the cut surface of pancreas vertically or horizontally with pushing and pulling of them. And we could get optimal angle for PJ suture. It was also helpful to control cut surface bleeding and to block pancreatic branch duct of pancreatic stump.

Results: We performed three laparoscopic PJ with dual retraction technique. It took 95 min, 85 min and 80 min for PJ anastomosis, respectively. There was no pancreatic fistula and the patients were discharged without complication.

Conclusion: The laparoscopic PD is a challenging procedure. The dual retraction technique could help to overcome the obstacles of laparoscopic PJ.

V230 - Video - Pancreas

A Safe Technique for Laparoscopic Distal Pancreatectomy with Spleen Preservation

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Background: Spleen-preserving distal pancreatectomy is widely indicated for benign and low-grade malignant pancreas diseases, and laparoscopic approaches can lead to higher rate of spleen preservation rather than open surgery. The Kimura procedure that preserves splenic vessels should be preferred to the Warshaw to avoid complications such as splenic infarction, splenomegaly, perigastric varices. But splenic vessels preservation may be considered high technically demanding. We have a safe, sequential method for complete laparoscopic spleen-preserving distal pancreatectomy without splenic vessels ligation, and aim to present in detail.

Methods: We place five trocars in the lithotomy position.

Firstly, dissecting greater omentum widely is followed by enough exposure of splenic artery.

Secondly, to cut the fascia and mobilize extensively the posterior side of the pancreas. Then splenic vein can be exposed circumferentially in a prudent manner to dissect vein branches.

Finally, to compress and divide the pancreas using linear staplers can make it easier continuing to transect small vessels from the splenic artery or vein to pancreas body by medial-to-lateral approach without mobilizing the spleen. To avoid pancreatic fistula, it is important enough compression and slow transection of the pancreas with religious care. We consider this is one of the major point that means first pancreas transection without spleen mobilization, so we call this the 'modified' Kimura procedure.

Results: From October 2014 to December 2016, 15 patients with benign or low-grade malignant pancreatic tumors were operated laparoscopically, included 7 spleen-preserving without splenic vessels ligation under this procedure. There was no conversion to open surgery and no conversion to other procedures derived from intraoperative complications.

Conclusions: Laparoscopic spleen-preserving distal pancreatectomy without splenic vessels ligation is safe and feasible unless tumors are attached to the spleen or splenic vessels. And we will show three different laparoscopic procedures, the modified Kimura procedure, the Warshaw procedure, and conventional distal pancreatectomy with splenectomy according to the tumor location.

V231 - Video - Pancreas

Totally Laparoscopic Modified Appleby Procedure for Pancreatic Adenocarcinoma

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Background: Vascular involvement has been traditionally contraindication to minimally invasive surgery in patients with localized pancreatic cancer. Major venous involvement is no longer considered to be a contraindication for laparoscopic resection, major arterial reconstruction rationale remained controversial. The objective was to define feasibility and safety of laparoscopic distal pancreatectomy with en-bloc celiac axis resection in patients with locally advanced pancreatic cancer.

Methods: Two cases of totally laparoscopic distal pancreatectomy with en-bloc celiac axis resection in patients with locally advanced pancreatic cancer of body and tail with celiac axis involvement were analyzed.

Results: The mean operation time was 260 min. Mean blood loss was 125 ml, no blood transfusion was needed in both cases neither during operation nor postoperatively. Intensive care unit stay was 3 days in the first case and 2 days in the second. There weren't clinically significant complications postoperatively. No clinically relevant pancreatic fistula was diagnosed. Blood supply to the liver on postoperative MSCT was sufficient, no liver hypoperfusion associated complications were revealed. Surgical margins including retroperitoneal surface were negative (R0) in both cases. The first patient underwent chemotherapy and had 18 months cancer free survival. No recurrence of epigastric pain was revealed. The second patient up to date has 5 months cancer free period with no pain.

Conclusion: Laparoscopic distal pancreatectomy with celiac axis resection is feasible and safe in highly selected patients and can provide R0 resection for patients with locally advanced pancreatic body and tail cancer.

V232 - Video - Pancreas

Major Venous Resection During Laparoscopic Pancreatic Procedures

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Aim: To demonstrate feasibility of various types of major resection during laparoscopic pancreatoduodenectomy, total pancreatectomy and distal pancreatectomy.

Methods: Of a consecutive series of 180 pancreatic resections, twelve patients underwent concomitant SMV/PV resection and reconstruction with the intent of achieving a R0-resection.

Results: Of twelve patients who underwent concomitant major veonous resection, seven had tangential resection followed by lateral wall repair with prolene 4–0. One patient had tangential resection with patch reconstruction. Two patients had end-to-end primary venous reconstruction and three patients had a prosthetic vascular graft interposition. There was no operative mortality. The SMV/PV was patent in all patients postoperatively on ultrasound Doppler or CT scans. Four patients (who underwent circular venous resection) had postoperative complications. One 77 year old patient with pre-existing cardio-vascular disease died of heart failure on postoperative day 2, one had postoperative bilio-enteric anastomotic dishiscence and underwent immediate re-laparoscopy for repair, one had postoperative hemorrhage and underwent laparotomy, and one had grade B pancreatic fistula.

Conclusions: Major venous resections are feasible during different laparoscopic pancreatic procedures. More studies are needed to evaluate the role of laparoscopy in borderline pancreatic cancer.

V233 - Video - Pancreas

Laparoscopic Radical Antegrade Modular Pancreatosplenectomy with En-Bloc Clearance of the Extrapancreatic Nerve Plexus for Pancreatic Ductal Carcinoma

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Aim: Ductal adenocarcinoma of the pancreas (PDAC) easily spreads along nerve sheaths. Invasion of extrapancreatic nerve plexus has received greater attention in pancreaticoduodenectomy, eventually leading to the introduction of the concept of "mesopancreas". The mesopancreas exists also on the left side and requires the same radical resection that is now performed on the right side, especially for PDACs located in the body. In this video we present our technique for laparoscopic radical antegrade modular pancreatosplenectomy with en-bloc clearance of the extrapancreatic nerve plexus.

Methods: The technique originally proposed by Strasberg and co-workers (Surgery 2003;133:521–527) was duplicated using conventional laparoscopic techniques. A total of 4 to 5 ports were used (2 or 3 5 mm ports, one 12 mm port, and one 11 mm port). Radical en-bloc resection of extrapancreatic nerve plexus was systematically pursued by entering the lymphoneural sheath enveloping the superior mesenteric artery (SMA) the level of the colic artery and proceeding proximally to fully clear the left aspect of both the SMA and the celiac trunk until the left celiac ganglion was reached and removed en-bloc. When getting close to the origin of the SMA the dissection was extended also to the right, so that also the right celiac ganglion was resected en-bloc.

Results: This technique was used in seven consecutive patients diagnosed with potentially resectable PDAC located in the body of the pancreas. Resection was accomplished in all patients without conversions to open surgery and no severe postoperative complication was observed (≥Clavien-Dindo grade 3).

Conclusions: PDAC pursue a high grade biologic course with fatal outcome in the vast majority of patients. While a true improvement in prognosis is expected to come from more effective medical treatments, radical surgery remains key in patients with resectable PADC. Our video shows that the use of laparoscopy does not limit the radicality of the procedure.

V234 - Video - Pancreas

Spleen Preserving, Laparoscopic Total Duodenopancreatectomy for Intraductal Papillary Mucinous Pancreatic Neoplasia

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Objectives: Pancreatectomy, performed exclusively by laparoscopic technique is the most advanced laparoscopic procedure from the pancreatic surgery arsenal. Though the literature indicates that this surgery is feasible and can be as safe as classic duodenopancreatectomy, because of the technical complexity and the risk of complications few surgeons chose this approach.

Case report: We present the case of a 40-year-old patient, diagnosed with pancreatic intraductal neoplasia (IPMN) for which we performed a spleen preserving laparoscopic total duodenopancreatectomy with hepatico-jejunal anastomosis by ''in situ'' ascended loop and precolic gastrojejunal anastomosis. The video shows the main operative steps, illustrating both the resection and the reconstruction aspects. The postoperative outcome was marked by a late biliary fistula (day 13 post surgery), externally drained, that was solved by specific treatment. At the moment, at 12 months after surgery, the follow up controls shows no signs of recurrent neoplasia.

Conclusions: We believe that total laparoscopic approach is feasible for radical surgery of the pancreas, a very important aspect being the careful selection of patients, their anatomopathological particularities, surgical technique and the experience of the surgical team in advanced laparoscopic procedures. All this can influence the outcome of the surgery.

V235 - Video - Pancreas

Icg Enhanced Fluorescence in Laparoscopic Surgery. Widening the Spectrum of Use

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ICG-enhanced laparoscopic surgery can be applied during different procedures offering to the surgeon additional information on anatomy, perfusion, or lymphatic drainage. Besides, with the development of these experiences, new applications of the ICG fluorescence are continuously described.

During the treatment of a pancreatic insulinoma, an integral part of the laparoscopic approach is the application of intraoperative ultrasounds, which is indispensable for accurate intraoperative localization of the lesion in the pancreatic region. Due to the hypervascular nature of these tumors, we hypothesized that the lesion could be easily identified by fluorescence.

In this video we present the case of a distal pancreatic insulinoma located by means of laparoscopic ultrasounds and ICG angiography. Also, the laparoscopic distal splenopancreatectomy is shown.

V236 - Video - Pancreas

Laparoscopic Distal Splenopancreatectomy. A Standardized Approach

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Although laparoscopic surgery of the pancreas is effective and safe in selected cases, its level of implantation and development has not been similar to other procedures.

We present the laparoscopic treatment of a complex lesion located in the distal pancreas by means of a standardized approach.

The video presents the case of a 44-year-old patient diagnosed as an incidental finding. Image test revealed an 11.4 mm cystic lesion in the tail of the pancreas. A MRI reported a complex cystic lesion with a dominant 16 mm cyst located in the tail of the pancreas and suggestive of microcystic or serous cystadenoma, with no IPMN. Besides, a solid 15 mm lesion suggestive of neuroendocrine neoplasia was found. Due to the complex nature of the lesions, surgical treatment was proposed. The patient underwent a standardized distal splenopancreatectomy. The definitive diagnosis was consistent with a branch duct IPMN with mild dysplasia associated with a 15 mm Grade I neuroendocrine neoplasia.

V237 - Video - Pancreas

Fully Intracorporeal Gastropancreatostomy During Robotic Whipple Pancreatoduodenectomy

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Introduction: Robotic surgery was used quite early after introduction of the technology. Potential benefits were 3D image and facilitation of wrist-like movements.

Aim: To present our experience from fully intracorporeal robotic pancreatoduodenectomies.

Methods: Based on a large robotic experience (1522 procedures) of a great spectrum of general surgery indications, we proceeded with pancreatic procedures including 10 Whipple procedures, 9 distal pancreatectomies (4 with spleen preservation) and 4 enucleations of pancreatic tumors. A fully intracorporeal restoration of GI passage was used in 9 out of 10 Whipple procedures (gastropancreatostomy, duodenojejunostomy and choledochojejunostomy).

Results: succesfull outcomes of all procedures justified the choice of robotic technique in comparison to other approaches. Lymph node harvesting was greatly facilitated by the 3D image and the intuitive motion of the insturments. Benefits were most evident in the case of pancreatoduodenectomy, in which use of the robot proved to dramatifcally decrease the ICU stay (4–12 h), while enhancing postoperative recovery and minimizing the need for perioperative analgesia.

Conclusions: robotic surgery overcomes the limitations of laparoscopic surgery in image quality, degrees of freedom of surgical instruments and ergonomy. In pancreas surgery it might offer a benefit in lymph node clearance, fashioning of the anastomoses and overall perioperative morbidity.

V238 - Video - Pancreas

Laparoscopic Cephalic Duodenopancreatectomy for Benign Ampullary Tumor

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Introduction: Laparoscopic duodenopancreatectomy performed for cephalic pancreatic tumors or ampullary tumors represent a technical challenge. It requires specialized instruments and technical skills of advanced laparoscopic surgery.

Aims: We present the case of a patient aged 51 years who was clinically and imaging (CT and EUS) diagnosed in our service with high dysplasia ampullary adenoma.

Methods: In this case, it was performed a laparoscopic cephalic duodenopancreatectomy with dual-layer, continuous thread 3–0 pancreatic-jejunostomy, hepatic-jejunostomy TL with separate threads and mechanical gastrojejunostomy TL using EndoGia 60 mm 3.5 mm stapler. The entire surgical intervention lasted 10 h, 150 ml blood loss.

Results: Postoperative recovery period was marked by the appearance of a hepatic-jejunostomy fistula that required classical reintervention and restoration assembly. The patient was discharged surgically cured day 11 of hospitalization.

Conclusion: Laparoscopic approach in treating cephalic pancreatic tumors in selected cases is feasible. Given the complexity and duration of surgery, experts recommend performing this type of surgery in two teams (first one for resection and the other for reconstruction).

V239 - Video - Pancreas

Laparoscopic Conservative Pancreas-Sparing Resection of a Branch-Type Ipmn in the Uncinate Process of the Pancreas

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In the video is presented the case of a 57 years-old woman who was operated of a laparoscopic resection of a 25 mm symptomatic branch-typi IPMN in the uncinate process of the pancreas. On MRI it was detected a clear comunication between de main pancreatic duct and the IPMN. On previous endoscopic ultrasound with citology was discharged malignancy. Due to persistent symptoms it was planned a laparoscopic resection of the IPMN preserving the head of the pancreas. All the steps of the procedure and well illustrated. Patient recovered well and was discharged on 2nd postoperative day. No complications were detected.

V240 - Video - Pancreas

The Utility of Vessel Tracking Technique Using Doppler Flowmeter for Laparoscopic Surgery in Pancreas

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Background: Doppler ultrasonographic imaging provides visualization of vessels in the body. Doppler flow meter makes possible to detect invisible vessels buried in the tissue. As these techniques are non-invasive and easy to perform during the surgery, we have introduced these techniques in laparoscopic surgery in order to reduce operative unexpected vessel injury. We evaluated the utility of the intraoperative Doppler ultrasonography guided vessel detection and tracking technique (Dop-US) for laparoscopic surgery in biliary tract and pancreas.

Patients and Methods: Consecutive sixteen patients who received laparoscopic distal pancreatectomy (Lap-DP) were introduced Dop-US method and investigated. The Dop-US was performed using the bidirectional Doppler flow meter laparoscopic probe for searching and tracking vessels during operation. We identified common hepatic artery (CHA), splenic artery (SA) and portal venous system (PV) in Lap-DP by measuring flow speed and wave shape pattern. The detection rate of each artery was compared with Dop-US and preoperative enhanced CT with three-dimensional image.

Results: The wave form pattern of each artery and portal PV acquired by Dop-US differed clearly. The average of maximum flow speed was 30.3 cm/sec in arteries and 8.1 cm/sec in PV with statistical significant difference ($p<0.001$). Dop-US achieved complete detection of all arteries and PV in all patients without any pancreas parenchyma injury. This method enabled to identify the invisible vessels because of past upper abdominal laparotomy intra operatively in 72 years-old female patient.

Conclusions: It was quite simple and easy to perform vessel detection technique using Doppler US in Lap-DP. This approach was suggested to be the contributing procedure for improvement in safety of laparoscopic surgery in pancreas.

V241 - Video - Robotics, Telesurgery and Virtual Reality

Robot-Assisted Right Colectomy and Cholecystectomy with Robotic Endowrist Stapler and the Bluetooth Integrated Table Motion for the da Vinci Xi

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Background: The new robotic Endowrist surgical staplers and the new Integrated Table Motion (ITM) for the da Vinci Xi are new devices that allow to control directly from the console all steps of mechanical surgical suture and patient' re-positioning without undocking the robot with instruments still inside the abdomen. We present a case of robot assisted right colectomy and cholecystectomy with the da Vinci Xi® and this new device.

Materials and Methods: An 81-years old woman with an adenocarcinoma of the right colon and gallstones was referred to our center. She was operated on with da Vinci Xi platform with right quadrant trocar' disposition.

Results: The procedure was successfully completed in 270 min. The patient position changed one time during the intervention with instruments left inside the abdomen and without undocking the robot. Both the resection of the transverse colon and of the last ileal loop, together with the ileocolic anastomoses were realized through the use of robotics linear stapler. The enterotomies were closed with a double layer of continuous sutures. Firstly the patient was arranged 15° tilted to the left and in Trendelemburg position for right colectomy. Then for the right colic flexure and ileo-colic anastomosis, the inclination was reduced. No external collision or other problems related to the operating bed was noted. There were no surgical complications or a need for conversion to laparoscopy or laparotomy. The patient had an uneventful recovery and was discharged from hospital after 4 days.

Conclusions: The linear robotic stapler could give some advantages allowing the operator directly to control all the steps of the suture: "positioning, grip, clamp and fire". It also allows the full articulation of the stapler with a range of 108° and reduces the possibility of error related to the thickness of the tissue within the jaws of the stapler noting the suitable thickness. Moreover, with the use of specific table motion the patient can be moved without undocking the robotic platform. These advantages can also reduce the overall operating time and make the procedure more fluid.

V242 - Video - Robotics, Telesurgery and Virtual Reality

New Technologies in Robotic Rectal Resection: da Vinci Xi, Integrated Table Motion, Endowrist Robotic Stapler and Indocyanine Green Fluorescence

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Background: The use of new technologies in surgery has expanded enormously in recent decades, not only in open or laparoscopic surgery, but also in the new frontier of robotic surgery as well. We present a case of anterior rectal resection with the da Vinci Xi, the new Integrated Table Motion (ITM), the new robotic EndoWrist linear staplers and the indocyanine green fluorescence.

Materials and Methods: A 78-years old man with an adenocarcinoma of the rectum, who previously underwent neoadiuvant short course radiotherapy, was operated with da Vinci Xi® platform with left lower quadrant trocar' disposition.

Results: The procedure was successfully completed in 245 min. The patient position was changed twice during the intervention with instruments left inside the abdomen without undocking the robot. Firstly the patient was arranged for the inferior mesenteric vein, for the splenic flexure and descending colon mobilization and then for Total Mesorectal Excision. No external collision or other problems related to the operating bed was noted. There were no surgical complications or a need for conversion to laparoscopy or laparotomy. The section of the rectum was performed with the new robotic linear staplers with EndoWrist technology. We also used fire fly indocyanine green fluorescence to assess anastomotic perfusion. The patient had an uneventful recovery and was discharged from hospital after 8 days.

Conclusions: The use of new technologies for the da Vinci Xi® could give some advantages in colorectal surgery, increasing the ability to perform full robotic surgeries, reducing the operative time by simplifying the workflow and increasing the safety of the procedures.

V243 - Video - Robotics, Telesurgery and Virtual Reality

Robotic Right Colectomy with Complete Mesocolic Excision and Intracorporeal Anastomosis: Bottom-Up Suprapubic Approach

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Background: A totally-laparoscopic approach for right colectomy with intracorporeal anastomosis (IA) is still considered a demanding procedure, but has potential benefits in terms of short-term complications and faster recovery when compared to extracorporeal anastomosis. Moreover, the introduction of the concept of complete mesocolic excision (CME) further adds technical complexity when dealing with vascular dissection along the superior mesenteric axis. The video demonstrates a new approach with suprapubic access to robotic right colectomy with IA and CME (DaVinci Xi System, Intuitive Surgical, Sunnyvale, CA, USA).

Materials and Methods: We present the case of a 68-year old female patient (BMI 25 kg/m^2, ASA 2) with histologically-proven adenocarcinoma in the proximal ascending colon. The patient was placed on the operating table in supine position with a slight Trendelemburg and left tilt (5–10°). Three 8-mm and one 12-mm (for staplers) robotic trocars were placed along a transverse suprapubic line, about 2–3 cm above the symphysis pubis. A 12-mm assistant port was inserted in the left flank.

After initial exploratory laparoscopy, the mesenteric root was detached with a bottom-up approach from the Gerota fascia till the duodenum was exposed. Vascular control was then carried out with complete exposure of the anterior aspect of the superior mesenteric vein and ligation of ileocecal vessels, right superior colic vein and right branch of middle colic artery at their roots.

Integrated indocyanine green-enhanced fluorescence was used to assess bowel perfusion. A robotic stapled side-to-side isoperistaltic ileocolic anastomosis was performed and the remaining enterotomies were closed with a double-layer barbed running suture. A mini-Pfannenstiel incision (resulting from the connection of the two paramedian suprapubic trocar sites) was used for specimen extraction.

Results: Operative time was 150 min. The patient was discharged on POD 4. Final histological examination documented a pT3N0 adenocarcinoma with 35 harvested nodes.

Conclusions: Suprapubic approach for robotic right colectomy provides a multiquadrant access with excellent frontal visualization of superior mesenteric axis for CME and allows for an easy fashioning of IA. It can potentially combine oncological radicality with faster recovery, minimal parietal trauma and low rates of incisional hernias.

V244 - Video - Robotics, Telesurgery and Virtual Reality

Single-Docking Multi-quadrant Dissection from the Splenic Flexure to the Pelvic Floor Made Possible by the da Vinci Xi

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Aims: The author presents the VIDEO of a standardized approach to performing robotic low anterior resection with complete splenic flexure mobilization, using an offset costofemoral port configuration. Earlier generations of robots required multiple dockings or complex ports placements in order to perform such multi-quadrant procedures. This video aims to demonstrate the features of the Xi that make it possible to complete the entire surgery with a single docking, using a simplified port configuration.

Methods/Results: The parts of the video include:

Patient and robotic patient cart positioning.

Oblique offset costofemoral port placement.

Docking of the dV Xi patient cart from patient left, for lower abdominal procedure.

Medial approach to IMV.

Splenic flexure mobilization.

Medial approach to IMA.

Total mesorectal excision.

Rectal transection and anastomosis.

Conclusions: The approach to robotic low anterior resection has been made more ergonomic with the technological advancements of the Xi.

V245 - Video - Robotics, Telesurgery and Virtual Reality

Standardized Technique for the Use of Fluorescence Imaging in Robotic Colorectal Surgery - Sentinel Node Identification and Bowel Perfusion Assessment

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Aims: We aim to show that fluorescence technology provides the potential to evaluate sentinel nodes and to determine the adequacy of bowel perfusion for safe anastomosis.

Methods/Results: The first section of this VIDEO demonstrates the methods for performing intraoperative peritumoral indocyanine green (ICG) injections – both endoscopically and transcutaneously. This is followed by sentinel lymph node identification using the da Vinci® Firefly™ fluorescence imaging. The second section of this VIDEO demonstrates the utility of fluorescence imaging in assessing for adequate bowel perfusion during anastomosis.

Conclusions: The Firefly™ fluorescence imaging of the da Vinci® Xi facilitates intraoperative identification of nodal drainage and bowel perfusion during robotic surgery.

V246 - Video - Robotics, Telesurgery and Virtual Reality

Robotic Right Colectomy with Complete Mesocolic Excision and a New Suprapubic Approach

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Background: Robotic approach to right colectomy with complete mesocolic excision (CME) may offer some technical advantages in comparison with standard laparoscopy. The video shows technical aspects of robotic right colectomy with CME with a new suprapubic approach.

Methods: The patient is positioned in supine position, with arms and legs adducted; hips are lifted and thighs lowered in order to avoid any collision with robotic arms. Operative table is in slight Trendelemburg position (10°) and rotated to the left (10°). Four robotic trocars are inserted along a horizontal suprapubic line 3 cm above the pubis; an accessory 10 mm trocar for the assistant is inserted in the left flank. Procedure starts with separation of the mesentery root from the posterior plane by suspending cranially caecum and last ileal loop with the third arm and assistant's instrument. Dissection continues cranially to separate Toldt's fascia of ascending mesocolon from the retroperitoneal plane; duodenum and head of pancreas are reached. The suprapancreatic part of superior mesenteric vein (SMV) is exposed and the dissection of posterior plane is completed. Small bowel is displaced in left abdominal quadrants and the peritoneum of the anterior aspect of the mesentery is incised along the superior mesenteric axis. An extended lymphadenectomy is realised along the left border of superior mesenteric vessels. Ileocolic, right colic and right branch of middle colic vessels are divided between clips. Colo-epiploic and colo-parietal detachment are performed and transverse colon and last ileal loop are transected with a linear stapler. After verifying intestinal stumps perfusion by fluorescence imaging a mechanical latero-lateral ileo-colic anastomosis with manual closure of the insertion holes is realized. The specimen is extracted through a Pfannenstiel incision.

Results: Eighteen patients with right colon cancer underwent a robotic right colectomy with suprapubic approach. Mean operative time was 249 min and blood losses were negligible. Mean number of harvested lymph nodes was 40. First bowel movements were observed on third postoperative day and median hospital stay was 6 days. No anastomotic complications occurred.

Conclusions: Robotic right colectomy with a suprapubic approach has promising oncological results highlighted by the high number of harvested lymph nodes.

V247 - Video - Robotics, Telesurgery and Virtual Reality

Experience of Robot-Assisted Radical Prostatectomy (RARP) in Renal Transplant Recipients

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Objective: With the recent increase in renal transplant recipients, diagnosis of prostate cancer after renal transplantation has also become more frequent. Our experience with robot-assisted radical prostatectomy (RARP) in two renal transplant recipients is presented in this video.

Methods: Standard RARP employs four ports, including a camera for the robot and two extra ports for an assistant. We shifted the standard RARP port configuration to the left by 2 cm for renal transplant recipients.

Case: A 72-year-old man with an 18-year dialysis history underwent renal transplantation from a deceased donor 5 years previously. Biopsy was conducted due to a high PSA level (9.73 ng/mL) and prostate cancer (GS4+4=8) was detected at 6/12 sites (left: 6/6). RARP was performed with a diagnosis of cT2aN0M0 disease.

Case: A 59-year-old man with a 1-year dialysis history underwent renal transplantation 11 years previously. Biopsy was conducted due to a high PSA level (6.21 ng/mL) and prostate cancer (GS4+5=9) was detected at 1/12 sites (left: 1/6). RARP was performed with a diagnosis of cT1cN0M0 disease.

Discussion: The following precautions are required when RARP is performed in renal transplant recipients. (1) It should be recognized that lymph node dissection will be difficult on the side of renal transplantation. (2) The ports should be placed carefully because the transplanted kidney protrudes considerably into the operating field. (3) Prevesical detachment should be minimized and the site of the ureteral stent should be selected carefully in consideration of migration of the transplanted ureter. (4) Protective maneuvers are required because the tissues are fragile due to dialysis and oral steroid therapy. (5) Information should be collected, such as the time and method of transplantation as well as the center where it was done, because of individual differences in the severity of pelvic cavity adhesions and migration of the transplanted ureter.

Conclusions: RARP was possible without serious complications in our two patients, suggesting that RARP can be an effective option for renal transplant recipients.

V248 - Video - Robotics, Telesurgery and Virtual Reality

Robotic Ivor- Lewis Oesophagectomy with Intra-corporeal Sutured Anastomosis

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Introduction and Aims: The Ivor-Lewis Oesophagectomy involves entering the abdominal and thoracic cavities, often in the form of thoraco-laparotomies and is one of the most invasive operations in upper gastro-intestinal surgery. Traditionally, this has been associated with a significant morbidity and mortality. Robotic assisted minimally invasive Oesopahgectomy has been in vogue in the last decade in various centres of excellence with varying degrees of success. The Da Vinci Robotic system® has the advantage of improving the surgical dissection with additional degrees of freedom from the robotic arms.

The aim is to show our technique of a Robotic Oesophagectomy with special emphasis on the ease of a thoracic intra-corporeal robotic oesophago-gastric sutured anastomosis.

Methods: Our technique of the robotic assisted Ivor-Lewis Oesophagectomty consists of a laparoscopic abdominal mobilisation of the stomach and creating the gastric pouch based on the Right gastro-epiploic vessel. A radical abdominal lymphadenectomy is also performed. Then the patient is positioned onto a left lateral position and the da Vinci Xi® robotic arms are deployed through thoracoscopic 8 mm incisions. Following the oesophageal mobilisation, radical lymphadenectomy and oesophageal transection, an end-to-end sutured oesophago-gastric anastomosis is fashioned using 3/0 Filbloc® sutures. The specimen is extracted though an extension of the thoracoscopic port site using a wound protector. We present the video of the above procedure.

Conclusions: This video purports to shows our approach to the totally minimally oesophagectomy using the da Vinci Xi® Robotic system for the thoracoscopic part. We have highlighted the ease of forming the intra-corporeal sutured anastomosis and the degrees of freedom obtained using the robot arms for these very crucial steps in an oesophagectomy.

V249 - Video - Robotics, Telesurgery and Virtual Reality

The Use of Robotic Surgical Stapling Device During Oncologic Left Colectomy with Splenic Flexure Mobilization

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Aims: Robotic surgery has been developed to overcome some of the technical difficulties of laparoscopic instruments. However, to date few data support the safety and efficacy of the use of EndoWrist 45 (Intuitive Surgical, Inc.) device in colorectal surgery as well as its technical applications. Here we describe the use of robotic EndoWrist surgical stapler for the rectal section during a left colectomy with colorectal anastomosis for colon cancer.

Method: A 73 years-old female patient was diagnosed with a cT4N+M0 adenocarcinoma extending 30–35 cm from the anal verge. The patient underwent a robotic-assisted left colectomy.

The robotic cart, a *da Vinci Si*® surgical platform (Intuitive Surgical Inc., Sunnyvale, CA, USA), was positioned over the left hip at approximately 45° to perpendicular to the patient. Three robotic working arms were used, along with a camera. One assistant laparoscopic port was added for additional retraction. The *da Vinci* Instrument Arm 3 was placed on the right side with respect to the camera port. Energy devices included monopolar scissors and bipolar forceps. A medial to lateral approach was used with inferior mesenteric artery ligation at first. After the mobilization of the descending colon and the splenic flexure, the EndoWrist 45 stapler with a unique blue charger was used to divide the rectosigmoid junction. The specimen was removed through a 5-cm Pfannenstiel incision and a end-to-end mechanical anastomoses was carried out by circular stapler. Blood perfusion of the colon before and after the anastomosis was tested with the indocyanine green fluorescence angiography (Firefly™ Technology). The entire procedure was carried out with the robotic cart docked and only temporarily displacing the robotic arm 1 for the specimen removal.

Methods: The post-operative period was uneventful and the patient was discharged at post-operative day 7. Pathology confirmed an adenocarcinoma (pT4aN2b), with 16/20 lymph nodes positive, and free resection margins (R0).

Conclusion: The use of robotic EndoWrist stapler is safe and feasible. With its large range of motion and 90° articulation, it may contribute to improve precision and easiness during the procedure.

V250 - Video - Robotics, Telesurgery and Virtual Reality

Robotic Technology Enhances the Ergonomics of Performing Intracorporeal Bowel Anastomosis

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Aims: While the benefits of intracorporeal bowel anastomosis have been expounded in numerous publications, the widespread adoption of this technique has been hampered by technical difficulties posed by conventional laparoscopic instruments. The da Vinci® Surgical System offers seven degrees of movement with its EndoWrist instruments. Coupled with motion scaling and tremor filtering, it enhances the ergonomics of performing intracorporeal bowel anastomosis. We aim to demonstrate a reproducible step-wise approach to intracorporeal resection and anastomosis using the robotic assistance.

Methods: Intraoperative videos of right and left hemicolectomies were reviewed to prepare a standardized method that can easily be reproduced in other institutions. Port placement considerations, robotic patient cart docking position, recommended instruments and troubleshooting techniques are described in detail.

Results/Conclusion: Despite performing anastomoses in various parts of the abdominal cavity, robotic technology manages to simplify the procedure by providing an ergonomic operating platform for the surgeon.

V251 - Video - Robotics, Telesurgery and Virtual Reality

Robotic Total Gastrectomy

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The aim of this study is to present the technique of robotic total gastrectomy. The case involved a 72-year-old male patient with an advanced gastric cancer on the greater curvature of the stomach. The procedure involved by cutting the lesser sac, mobilization of the greater curvature and transection of the duodenum. daVinci Xi surgical systems (Intuitive Surgical, Sunnyvale, CA, USA) was used for the D2 lymphadenectomy and creation of the anastomosis. We have found that during a total gastrectomy for advanced gastric cancer very successful oncological resection can be achieved by robotic and also we could overcome the difficulties with regards to lymph node dissection and anastomosis.The operation took 110 min and blood loss was estimated at 50 ml. NG tube and sump drain were removed on postoperative day 4 after the leak test with fluoroscopy and was given water with metilen blue, a liquid diet on postoperative day 5, and a soft diet on postoperative day 6. He was discharged from hospital on postoperative day 6. The pathology reported as differentiated adenocarcinoma, with 5 out of 29 metastatic lymph nodes.

V252 - Video - Spleen

Laparoscopic Splenectomy for a Suspected Malignant SŒlid Tumor

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Laparoscopic splenectomy is a good indication for treatment of malignant hematological disease that require the spleen extirpation. Extraction of the spleen is facilitated by the possibility to morcellate the organ. However in the case of solid tumors, which are much more rare, the specimen should be extracted intact, and the tumor may difficult the splenic dissection. We present a 44 year old women, diagnosed of splenic cavernomatous hemangioma (4 cm). During the last controls the tumor become solid including small calcifications, increased to 6 cm and PET SCAN was slightly positive.. With the suspicion of malignant transformation, the splenectomy was indicated. The video shows the standard steps for lap splenectomy: 1.- lateral approach, 2.- 4 trocars, 3.- Section of gastroesplenic vessels, 4.- Ligature of the splenic artery, 5.- Spleen mobilization, 6.- Splenic hilum transection with endo gia 60 mm, 7.- Extraction of the specimen trough a minipfanestiel incision. Definitive histologic analysis showed sclerosing hemangiomatous changes without evidence of malignant cells.

V253 - Video - Spleen

Laparoscopic Spleen Preserving Surgery for Symptomatic Post Traumatic Splenic Cysts - Case Series

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Background: Post-traumatic splenic cysts are very rare. Total splenectomy has largely been replaced by spleen preservation surgery for the management of symptomatic cysts, which can be successfully carried out laparoscopically. We present here two challenging cases of splenic preservation surgeries carried out for post traumatic splenic cysts.

Patients & Methods:

Case: A 17 year old gentleman sustained splenic injury after being punched in his abdomen. His ultrasound suggested an 8 cm splenic haematoma along with free fluid. He was successfully managed conservatively. Subsequent radiological monitoring suggested this haematoma later organising into a large cyst with a maximum diameter of 13.7 cm. Patient remained symptomatic with persistent pain despite two years following trauma, hence surgical intervention was planned after discussing all the related risks and benefits. He underwent laparoscopic marsupialisation of splenic cyst. Histology suggested simple splenic cysts.

Case: A 26 year old gentleman presented with 2 years history of left sided abdominal pain following an accident. Examination revealed a mass in his left upper quadrant. Ultrasound scan suggested 19.1 cm cystic mass with mobile echogenic debris, displacing spleen inferiorly. This was confirmed by CT scan, suggested this as intrasplenic cyst 19 cm displacing left kidney. Hydatid antibodies were negative.

Since patient remained symptomatic despite taking analgesics, he opted for surgical intervention with understanding of all risks involved with surgery. He underwent laparoscopic marsupialisation of splenic cyst. Histology suggested simple splenic cysts. Follow up ultrasound showed no recurrence.

Both patients were managed laparoscopically by deroofing of the cyst wall following the failed aspiration of cysts.

Conclusion: Splenic preservation surgery avoids the loss of functions of spleen. Laparoscopic marsupialisation of peripherally placed splenic cysts is feasible and safe when performed by expert hands.

V254 - Video - Spleen

Laparoscopic Excision of Splenic Cyst Video Presentation

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Introduction: Although non parasitic splenic cysts are relatively rare in clinical practice, its frequency has increased recently due to increased use of ultrasound and CT scan for diagnosing intra-abdominal pathology.

Splenic cysts may remain asymptomatic in 30–60% of patients, but if they are symptomatic or cyst is larger than 5 cm in diameter, they should be treated.

Thus far, there is no evidence based management and treatment remains controversial. Aspiration of the cyst often leads to recurrence. Partial or total splenectomy has been the treatment of choice.

Nowadays, with ongoing interest in splenic preservation due to its important immunological function, we have moved away from splenectomy. With advanced laparoscopic technique, a more conservative approach can be achieved.

Case report: Video presentation of laparoscopic splenic cyst excision of 50 year old lady with non-parasitic splenic cyst diagnosed incidentally with CT and US. After standard preoperative preparation, entry to the abdomen was made via an infra-umbilical incision and a modified Hassan's open technique. A 30 degree camera was inserted and the splenic cyst was identified in the antero-inferior aspect of the spleen. Under direct vision, one 11 mm port was inserted in the epigastrium and two 5 mm ports were inserted in the left upper quadrant and supra-umbilical region.

Adhesion lysis was performed, the cyst aspirated, opened and resected with Ligasure flushed to the splenic tissue. Bleeding points and ooze were coagulated with Argon beam. Saline washout was performed and a Robinson drain was inserted.

The patient made a good recovery and was discharged home on the 2nd post-operative day. Histology confirmed simple splenic cyst. CT was performed 3 months later and showed no evidence of recurrence.

Conclusion: The optimal surgical treatment of non parasitic splenic cysts remains controversial. Laparoscopic splenic surgery is becoming a standard procedure. Laparoscopic de roofing and marsupialization of the cyst, total or subtotal cystectomy with or without partial splenectomy has been widely accepted.

V255 - Video - Spleen

Laparoscopic Splenectomy for Lymphoma

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Aims: Laparoscopic splenectomy is currently the operation of choice for the elective treatment of splenomegaly secondary to several hematologic conditions, including leukemia and lymphoma. This video shows the technical steps of a laparoscopic splenectomy for lymphoma.

Methods: A 65-year-old man presented in the emergency room with fever and pain in the upper left abdominal quadrant. An ultrasound found splenomegaly that was then confirmed by a CT scan (spleen size=17 cm). The hematologic work-up demonstrated the presence of splenic lymphoma and laparoscopic splenectomy was proposed.

Results: The patient was positioned in the right lateral decubitus position. Four trocars were used for the operation. The first step started by entering the lesser sac and dividing the short gastric vessels using an electro-thermal bipolar vessel sealer in a cephalad direction, thus exposing the anterior aspect of the splenic hilum. The splenic artery and vein were dissected by using blunt dissection and hook electrocautery and ligated using an endoscopic vascular stapler. At this point, the spleen was completely devascularized. The operation proceeded with a careful dissection of the tail of the pancreas, division of the spleno-colic ligament and transection of the spleno-phrenic attachments. Once the spleen was completely dissected, an extraction bag was inserted through a 10-mm port and the spleen was placed inside. The spleen was then extracted by connecting the three most lateral trocar sites. The postoperative course was uneventful.

Conclusion: Laparoscopic splenectomy is the elective treatment of choice for most symptomatic splenomegalies with minimal postoperative complications and excellent outcomes.

V256 - Video - Spleen

Laparoscopy for Splenic Cyst - When Preoperative Workup Fails to Determine Hydatid Disease

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Introduction: Hydatid disease is an endemic disease caused by infestation of an Echinococcus granulosus larvae. Most common involved organs are liver and lungs. Splenic hydatosis is relatively rare condition, found in up to 4% of the cases. The presented case demonstrates difficulties in preoperative diagnostics and intraoperative considerations regarding unrecognized hydatid disease of the spleen.

Case report: Forty-four year old male presented with left abdominal pain and bloating. Ultrasonography and CT scan showed large unilocular spleen cyst characterized as a simple cyst. In accordance with the preoperative workup, laparoscopic deroofing of the cyst was intended. Intraoperative findings were unusual for a simple splenic cyst. After the cyst wall was carefully opened, daughter cysts appeared. Due to the risk of intraabdominal content dissemination during laparotomy, we decided to continue with the laparoscopic approach. At first, the cyst content was drained without any intraperitoneal spillage, after which we performed partial pericystectomy, instillation of hypertonic saline solution and omentoplasty. Postoperative course was uneventful and albendazole therapy was advised on discharge.

Conclusion: Although isolated involvement of the spleen in hydatid disease is rare, echinococcal splenic cyst is a condition that must be kept in mind for all splenic cystic lesions, especially in the endemic regions.

V257 - Video - Spleen

Laparoscopic Spleenopexy for Wandering Spleen

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Aim: Very few cases of wandering spleen with splenic cyst have been reported in the literature, many of which end up in splenectomy as a result of torsion and subsequent ischemia. The aim of this case was to assess the possibility of preserving a wandering spleen by using laparoscopic procedures.

Methods: We present a case of 17 years old girl, with intermittent pain in left upper quadrant and left iliac fossa. Ultrasound, CT and later an MRI revealed presence of 11 cm splenic cyst of lower pole in a wandering spleen. Laparoscopy confirmed these findings, in addition to a twisted splenic pedicle.

Results: Cyst decompression followed by fenestration was done by using ultrasonic device. Spleen was anatomically returned to the left upper quadrant and spleenopexy was performed using 4–0 prolene stitched to the greater omentum and the phrenicocolic ligament ligament. Patient recovered well and histology confirmed a mesothelial cyst inclusion.

Conclusion: Laparoscopic cyst fenestration and spleenopexy is safe and effective spleen conservation procedure for splenic cyst in a wandering spleen.

Minimally invasive, spleen preserving procedures must be considered in treatment of young patients with uncommon presentations for fast recovery and good quality of life. There is a dire need to develop more laparoscopic spleen conservation procedures for better clinical outcome.

V258 - Video - Technology

Use of a Free Jaw Clip During Cholecystectomy Performed as Reduced-Port Surgery

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We have been performing single-port laparoscopic cholecystectomy since May 2009. We are able to perform reduced-port surgery (RPS) via a 1-cm umbilical incision, using two ports and small-diameter forceps. We expand the surgical field during the surgical procedure by using a suture or an end loop to ligate and apply traction to the gallbladder. We have, in collaboration with an eyewear manufacturer, developed a free-jaw clip, named FJ Clip, which we use to grasp visceral organs. Here we describe how the clip is used during cholecystectomy and report outcomes of its use. The FJ Clip has high grip force but does not crush tissues. It is made of stainless steel and can be reused after sterilization. FJ Clip is inserted through a 5-mm trocar without the use of specialized forceps. A skin incision is made approximately 1 cm cranial or ventral to the center of the umbilicus, the natural depression of the umbilicus is preserved, and pneumoperitoneum is established with the use of an insufflation needle in the resulting deficit created in the fascia. Access is achieved optically via a 5-mm trocar. A 6-mm end-tip cannula is then screwed on to the left side. Small-diameter forceps are inserted into the right flank and secured by means of triangulation. We use the FJ Clip to grasp the body of the gallbladder and secure the surgical field. Attaching and unattaching the grasping portion of the clip is easy and can be performed in a short period of time. When specimens are removed, the fascial incision is kept as small as possible to preserve the umbilicus cosmetically. When using the FJ Clip in the 49 cases, we encountered no intraoperative or postoperative complications. The mean operation time was 83 min which was significantly shorter than 127 min before use of the FJ Clip for 53 cases. And the mean postoperative hospital stay was standard, at 4.2 days. Thus far, the FJ Clip has proven useful. The FJ Clip, along with the use of small-diameter forceps, simplifies the performance of two-port RPS, and the cholecystectomy procedure is shortened considerably.

V259 - Video - Technology

Laparoscopic Iliac-Obturatory Lymphadenectomy Under Fluorescence Guidance for the Treatment of Melanoma

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Aims: The treatment for melanoma of the lower limbs includes excision of the primary tumor and ilioinguinal lymphadenectomy in case of lymph node metastases. This can be performed with different techniques (standard surgical approach, extraperitoneal laparoscopy or intraperitoneal laparoscopy). This video shows our technique of intraperitoneal laparoscopic lymphadenectomy under fluorescence guidance for the treatment of ilio-obturatory lymphnodal metastases in leg melanoma.

Methods: Near infrared (NIR) camera associated to dedicated light source and 10 mm 30° scope equipped with a special lens (Karl Storz GmbH, Tuttlingen, Germany) is used during the intervention. Indocyanine green (ICG) is a sterile, water-soluble, tricarbocyanine compound that in this case is binded with albumin. It is injected in the site of primary melanoma and is captured by the lymphnode stations in the obturator-iliac area. Once excited by NIR, ICG release fluorescence that can be detected by the system providing the visualization of the lymphonodes.

Results: ICG was resuspended in 10 mL of sterile water and then transferred to a 50 cc vial of 20% human serum albumin solution. This solution was injected at the four edges of the melanoma excision scar at the beginning of the intervention. We first proceeded with the isolation of iliac vessels. Using the fluorescence we identified all the lymphnodes around the iliac artery and we proceeded with extended lymphadenectomy. At the end of the intervention there was no residual area of ICG captation.

Conclusions: Laparoscopic approach using ICG for ilio-obturatory lymphadenectomy is a safe and feasible procedure and has many advantages over traditional techniques; in addition to the typical advantages such as less surgical trauma, no abdominal muscles and inguinal ligament incision and less postoperative hospitalization, it improves the vision of the operative area, in particular the fluorescence guidance guarantees a better lymphoadenectomy, with fewer risk of pathological tissue residual.

V260 - Video - Technology

Near Infrared Fluorescence by Indocyanine Green in Minimally INVASIVE Biliary, Gastric, Esophageal and Adrenal Surgery

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Aims: The development of a laparoscopic probe for near infrared fluorescence (NIR) by Indocyanine Green (ICG) provides intra-operative dynamic morphological and functional tissue assessment during minimally invasive surgery. Aim of this video is to report the authors' preliminary experience with this technology.

Methods: In 15 patients (4 males, 11 females, mean age 54.8 years) with symptomatic gallstones NIR-ICG cholangiography was performed during laparoscopic cholecystectomy (LC). Ten patients (7 females, 3 males, mean age 47,7 years) underwent laparoscopic adjustable gastric banding (LAGB) removal for failure and NIR-ICG fluorescence was used to evaluate gastric wall perfusion after band removal, to decide between concurrent or delayed sleeve gastrectomy. In one male patient with esophageal cancer (cT2N0M0) ICG-albumin 20% solution was injected in the peri-tumoral submucosa to identify the sentinel lymph node (SLN) during thoracoscopic and laparoscopic McKeown esophagectomy and to evaluate the anastomosis vascular perfusion. In 3 obese patients (2 males, 1 female, mean age 50,7 years, BMI>40 Kg/m^2) (Cushing syndrome 2; MEN 2-B syndrome 1) ICG was employed to identify the adrenal vein during adrenalectomy.

Results: NIR-ICG cholangiography was successful in all patients to identify the cystic duct and common bile duct prior to any dissection. In 5 patients with acute cholecystitis and empyema, fluorescence was less effective due to thickened tissue, but still useful. Biliary fluorescence showed its peak 7–8 h after ICG administration and persisted up to 24 h. No adverse reaction and no bile duct injuries (BDI) were observed. In one patient undergoing LAGB removal, NIR-ICG fluorescence identified areas of gastric wall hypo-perfusion and the patient was selected for delayed sleeve gastrectomy. SLN identification during esophagectomy was obtained 30 min after ICG injection, followed by loco-regional lymph nodes fluorescence for lymphadenectomy guidance. Definitive pathology was pT3N0M0 adenocarcinoma. During adrenalectomy, prompt adrenal vein visualization was obtained. ICG highlighted also the hyper-vascularized gland and the less perfused tumor tissue.

Conclusion: Minimally invasive NIR-ICG fluorescence is a safe and effective technology with several uses due to its ability to bind lipoproteins in blood, lymph and bile, providing real-time morpho-functional imaging. Larger patient samples are required to draw more definitive conclusions.

V261 - Video - Technology

Laparoscopic Repair of Giant Hiatal Hernia Using 4 K Technology

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Introduction: New 4 K Technology has improved laparoscopic view, gaining popularity and interest in the surgical community. Ultrahigh definition UHD represents the new advance in video technology, it delivers fourfold more detail than full high definition resulting in improved fine detail, increased texture and smoother images.

Aim: to asses the surgeon's expectancy for greater precision, control and flexibility and potential for fewer complications.

Methods: We present the laparoscopic repair of a giant, complicated hiatal hernia, using the new 4 K technology (Visera 4 K UHD System, Olympus). The steps of the procedure were: viscerolysis, reduction of the herniated stomach and esophageal abdominalization, crura's preparation and reinforced suture with mesh, and floppy Nissen fundoplication.

Results: The 4 K resolution gathered to the standard HD technology existing in our practice 6 months ago and 18 upper gastrointestinal procedures were carried out with high surgeons satisfaction (self report score).

Conclusion: The 4 K resolution allowed excellent definitions of the details during the dissection manoeuvres, as well as for teaching reasons. Future study will compare 4 K vs. 3D technologies, in order to obtain better vision and better surgical results.

V262 - Video - Technology

Laparoscopic Treatment of Post-Operative Peritonitis Due to Misuse of Advanced Energy Device

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Aim: Bowel injury is a rare but serious complication of laparoscopic surgery. There are few reports and reviews in literature regarding this topic, nevertheless mortality rate associated with laparoscopy-induced bowel injury is around 3%.

Although some of these complications have been well described, some have emerged recently in relation to new technology and techniques, such as the use of advanced energy devices.

This video shows a case of laparoscopic treatment of post-operative peritonitis due to misuse of advanced energy device.

Methods: A 67 years-old male patient underwent laparoscopic low rectal anterior resection for cancer. On 2nd post-operative day the patient complained acute and severe abdominal pain; physical examination revealed signs of peritonitis and traces of stool in the abdominal drain. Therefore, the patient was scheduled for urgent re-intervention.

Laparoscopic exploration of the abdominal cavity showed diffuse fecal peritonitis. Colorectal anastomosis was then carefully checked, as a leak on the suture was suspected; however, both hydro-pneumatic test and rectal injection of methylene blue did not show any leak on the anastomotic site. Perfusion of the anastomosed stumps through real time intra-operative angiography with indocyanine-green (ICG) enhanced fluorescence was also tested, without finding any ischemic or hypoperfused area, as it was during first surgical procedure.

Further inspection of descending colon identified the site of bowel perforation: it was located on the lateral wall of descending colon; even in this bowel segment no perfusion defect at ICG imaging were reported; the bowel defect was repaired with two stitches and extensive washing of the abdominal cavity was carried out.

The video recording of the first procedure was then examined and we were able to define in a misuse of the advanced energy device the cause of the leak, due to a unnoticed damage of the colonic wall after the contact with the blade of the device.

Conclusion: As this case shows, accidental bowel injuries after laparoscopic colorectal surgery are unpredictable events that may look as if anastomotic leakage occurs.

Burns and perforations of the bowel during laparoscopy are rare complications that could be preventable by familiarity with the physical properties of new laparoscopic instruments.

V263 - Video - Technology

Morphing Between Stiff and Soft: Octopus-Inspired Robot Assisted Minimally Invasive Surgery

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The current philosophy in commercial medical instrument design is mainly focused on systems using rigid tools equipped with dexterous tips. Most devices for endoscopic and minimally invasive surgery are rigid, lack a sufficient number of degrees of freedom (DOFs) and/or are incapable of modifying their mechanical properties based on the tasks to be performed. There are limitations on today's rigid laparoscopic and robot-assisted surgical systems due to the restricted access through the Trocar port and difficulties with rigid robot tools operating inside a confined space filled with organs.

We have created a new robotic system to overcome limitations of the aforementioned traditional laparoscopic robots composed of rigid components. The design of the arm incorporates actuation chambers which elongate in response to pressurisation. Employing a helical thread being incorporated in the chamber walls reduces lateral expansion to a minimum. The robotic manipulator can change its stiffness based on a utilising a granular-jamming-based mechanism. The manipulator consists of two modules with integrated stiffening mechanism. The miniaturised arm has been tested in human cadavers. All cadaver tests were conducted under the supervision of medical experts. The efforts focused on testing the proposed technologies in a realistic, size-constrained scenario and evaluating aspects such as robustness. The developed surgical manipulator has a diameter of 14.5 mm and, thus, fits through a standard 15 mm trocar port used for laparoscopy and is composed of two soft modules capable of multidirectional bending and elongation. For the cadaver tests, the tool at the manipulator tip chosen was a miniaturised camera. This camera provided the surgeons with visual feedback from the operating site. The camera allowed a qualitative assessment of the overall surgical performances highlighting the benefits introduced by the novel approach in a realistic surgical scenario.

V264 - Video - Thoracoscopic Surgery

Thoracoscopic Removal of Large Esophageal Leiomyoma with Ultrasound Navigation

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Background: The preoperative investigation does not allow to determine the type of organ resection and the definite decision is often made intraoperatively. The intraoperative ultrasound is one of the tool which allows to make complete evaluation via laparoscopic or thoracoscopic approach.

Objective: To demonstrate the feasibility of thoracoscopic approach with ultrasound navigation which determine the type of resection in the clinical case of large leiomyoma of distal esophagus.

Material and method: Patient is women, 69 y.o. with the symptoms of mild dysphagia. The investigation, including upper GI endoscopy, CT and EUS revieled esophageal lesion up to 5 cm in size, located in the distal third of esophagus and coming from muscularis propria. Given the large size and complex shape the option of surgical removal was the distal esophagectomy with gastroplasty and intrathorasic anastomosis via thoracotomy. However, as a fisrt step we used thiracoscopic ultrasound to evaluate the definite volume of resection.

Results: Intraoperatively the thoracoscopic ultrasound was made. The hypoechoic heterogenous lesion was found in the distal portion of esophagus, consisting of two parts: intraluminal part (2,5 cm) amd extraluminal part (2,0 cm). The mobilisation of the lesion was done via thoracoscopic approach under ultrasound and endoscopic guidance using precise dissection of the tumor from muscle layer without opening of esophageal lumen. The defect in the esophageal wall was closed with suturing (10 interrupted sutures). The water–air probe was negative. Postoperative period was uneventful. The pathology showed leiomyoma.

Conclusion: The thoracoscopic approach with ultrasound navigation allowed to perform minimally invasive organ-preserving surgery in patient with large esophageal leiomyoma.

V265 - Video - Thoracoscopic Surgery

Video-Assisted Thoracic Surgery (VATS) Completion Lobectomy with Intrapericardial Vessel Dissection

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Objectives: Video-assisted thoracic surgery (VATS) anatomical resection has been widespread since the early 1990s, however, re-do surgeries such as completion lobectomy are difficult under thoracoscopy. We herein report the case video that completion lobectomy after wide wedge resection with hilar inspection is performed under VATS including pericardiotomy.

Case video summary: 68 year-old female with left upper lobe nodule was operated for diagnosis and therapy. First, VATS wide wedge resection and hilar dissection underwent and intra-operative pathological diagnosis was undetermined. Since the final pathology revealed primary lung adenocarcinoma, VATS completion left upper lobectomy and systemic node dissection underwent in three weeks after first operation. Tight adhesions of hilar structure led to be difficult for VATS and pericardiotomy was added. Main pulmonary artery was encircled and superior pulmonary vein was divided intrapericardium. Interlobar arteries were exposed and transected by endostapler. Left main bronchus was transected after division of anterior branches of pulmonary artery. Systemic nodal dissection were performed and total operation time was 335 min and blood loss was 50 ml. There were no adverse events in hospital stay and she discharged at 14 postoperative days. Final pathological finding was T1bN1M0, stageIIA adenocarcinoma and no evidence of recurrences two years after operation without any adjuvant therapy.

Conclusions: VATS re-do surgery is feasible and safe, regardless of hilar adhesion. Although surgeons should make a decision to convert from VATS to open in the difficult re-do surgery, thoracoscopic pericardiotomy is useful for large vessel maneuver.

V266 - Video - Thoracoscopic Surgery

Dispaly of 3D Thoracoscopic Esophagectomy

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V267 - Video - Thoracoscopic Surgery

Display of Video-Assisted Thoracoscopic 3D Mode Operation for Pulmonary Nodules

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V268 - Video - Thoracoscopic Surgery

Videothoracoscopic En-Bloc Stapling of the Thoracic Duct For Prevention and Treatment of Chyle Leaks After Esophagectomy

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Aims: The aim of this video is to show the surgical technique of supra-diaphragmatic thoracic duct stapling for prevention and treatment of chylothorax.

Methods: The first patient is a 49 year-old male with an adenocarcinoma of the cardia who underwent a totally minimally invasive Ivor-Lewis esophagectomy. During the thoracoscopic procedure, performed with 4 trocars in the semi-prone position, the space between the vertebral bodies and the aorta right above the diaphragm was identified and the tissue including the azyos vein and the thoracic duct was encircled en-bloc with a Penrose drain. A 45 mm linear endostapler with vascular cartridge was then applied and fired.

The second patient is a 62 year-old patient on postoperative day 7 after a hybrid Ivor-Lewis esophagectomy. The output from the chest tube progressively increased and reached 2500 ml on postoperative day 7; the aspect of the fluid was milky and the dosage of triglycerides was 3 times greater than in the serum. A right thoracoscopic access with 3 trocars was planned for ligation of the thoracic duct. Four hours before the operation, 250 ml of cream were given through the nasogastric tube. The patient was set in semi-prone position. Careful dissection of the adhesions between the lung and the chest wall was carried out with an electrocautery hook. A chylous leak was evident from the site where metallic clips had been placed during the previous open esophagectomy. The right side of the aorta was dissected and a right-angled instrument was used to encircle en-bloc the periaortic tissue including the thoracic duct. A 45 mm endostapler with vascular cartridge was applied and fired.

Results: The procedures were successful and led to complete sealing of the thoracic duct. The postoperative course was uneventful.

Conclusions: Videothoracoscopic stapling is safe and allows quick and effective sealing of the thoracic duct. By avoiding the trauma of a redo thoracotomy, thoracoscopic stapling may encourage earlier intervention in patients with chyle leakage who are refractory to conservative treatment.

V269 - Video - Training

Technique, Tips And Tricks for Two Stage Minimally Invasive Oesophagectomy

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Aims: Minimally invasive oesophagectomy (MIO) aims to achieve the same results as open oesophagectomy but with reduced postoperative morbidity. MIO is considered a more technically challenging procedure than open oesophagectomy and we aim to demonstrate this procedure in video format along with some additional tips and tricks.

Methods: A two stage MIO was recorded using standard Olympus laparoscopic equipment. The operation is divided into the abdominal and the thoracic phase. The abdominal phase begins division of the gastrocolic ligament while being careful to protect the right gastroepiploic vessels. This is followed by hiatal dissection and dissection of the lessor curve. Lymphadenectomy and division of the left gastric vein and artery are then performed. Next a feeding jejunostomy is placed and colopexy suture to prevent diaphragmatic herniation. The last step of the abdominal phase is to ensure the stomach is adequately mobilised so that the pylorus reaches the hiatus easily. After the patient has been repositioned in the 'swimming position' which is a semi prone position the thoracic phase begins with pleural dissection followed by division of the azygous vein with vascular EndoGIA. The oesophagus is then mobilised from the periaortic / pericardial tissue. The thoracic duct is clipped. Next the oesophagus is divided high in the chest using EndoGIA. A mini-thoracotomy is formed for specimen extraction and anastomosis with a circular stapler. Finally, an OrVil is placed in order to create a stapled thoracic *esophagogastric anastomosis* (CEA) anastomosis and the gastrostomy is stapled closed.

Results: Video aids are increasingly being used as teaching and learning resources to complement training for surgeons and medical students. The added benefit of this video is the additional tips and tricks regarding common intraoperative problems or mistakes.

Conclusions: This video provides step by step explanation of the procedure that a trainee or novice surgeon can use to supplement their training.

V270 - Video - Urology

Laparoscopic Varicocelectomy with Spermatic Vein Ligation Sparing the Spermatic Artery

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Introduction: Varicocele is one of the common causes of infertility in young adults. Early diagnosis and treatment is crucial.

Aims: The presentation of the laparoscopic varicocelectomy procedure, with spermatic vein ligation.

Material-Method: We present a case of a 25 year-old male with left varicocele and the laparoscopic technique of treatment. The patient proceeded with left-sided enlargement of the scrotum (grade III varicocele), while a Doppler ultrasound showed dilation of the vessels of the pampiniform plexus and blood reverse direction with a Valsalva maneuver. Pre-operative semen analysis was carried out and showed low sperm count (<15 million sperm cells per mm) and diminished sperm motility. Three-port laparoscopic procedure is described (one intra-umbilical 10 mm trocar – as used in Single Incision Laparoscopic Surgery (SILS) procedures, and another two 5-mm trocars to achieve triangulation), including internal spermatic vein double clipping, sparing the spermatic artery. The peritoneum is then closed with an endoloop. The operation time was 20 min. No postoperative complications were mentioned and the patient was discharged on the first postoperative day. He remains in a good clinical condition six months later, and a new semen analysis shows increased sperm count.

Conclusions: Laparoscopic approach is a safe and efficient method of varicocele treatment. The laparoscopic image offers magnification which facilitate spermatic vein ligation sparing the spermatic artery.

V271 - Video - Vascular Surgery

Laparoscopic Management of Vascular Injuries During Pelvic and Paraaortal Lymph Node Dissection

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Aim: Injury of major vessels during laparoscopic surgery is a rare but very dramatic complication. Almost in all cases it required conversion to laparotomy for completion of hemostasis.

This work represents our experience in performing laparoscopic hemostasis after major vascular injuries during pelvic (PLND) and paraaortal (PALND) lymph node dissection. Our operative technique is described, morbidity and short postoperative results were analyzed.

Methods: In 2010–2016 we performed 272 PLND and 368 PALND (640 procedures in 599 patients). Among them there were 558 cases of single region dissection: 231 PLND and 327 PALND, while 41 patients underwent both of them. Lymphadenectomy was the part of radical procedure for: cervical cancer – 127 (21.2%), endometrial cancer – 121 (20.2%), ovarian cancer – 19 (3.2%), colorectal cancer – 321 (53.6%) and other malignancies (seminoma of testis, melanoma) – 11 (1.8%). Dissection was performed by harmonic scissors and bipolar. To achieve hemostasis after major vascular injury we used the next steps: (1) pressure of vascular wound; (2) round dissection of vessel and applying of vascular clamps for injuries longer than 2 mm; (3) suturing the vascular damage with prolene 5/0.

Results: Performing lymphadenectomy we obtained 7 major vascular injuries (1.1%): 2 – aorta, 2 - vena cava inferior, 2 – vena iliaca and 1 – arteria iliaca. In all cases we performed laparoscopic hemostasis by suturing the defect of vessel without conversion to laparotomy. All vascular injuries occurred in patients with history of chemoradiotherapy, and there weren't any in case of primary treated patients. The size of vascular damage was up to 2 mm in 5 cases and more than 5 mm in 2 cases of vena cava injury. The average time from injury to completion of hemostasis −17 min (11–34). The estimated blood loss −150 ml (45–700). There was no need for transfusion in all cases. The median hospital stay in case of vascular injury was 4,9 days and no significantly longer than in main group (4,5). No thrombotic complications and death occurred.

Conclusions: Vascular injury of major vessels during lymphadenectomy is rare but very serious complication that can be successfully treated laparoscopically by experienced surgeon.