Tuberculosis of the Terminal Ileum and Cecum with Crohn’s Disease: Clinical and Immunohistochemical Diagnosis and Videolaparoscopic Surgery Approach.

Eduardo Pirolla, Prof Dr Med1; Felipe P. Ribeiro2, Fernanda Junquera Pirola3

1Spaulding/Massachusetts General Hospital Lab/Harvard Medical School, 2Medical Science School of Santos, 3Simmons College Pre Medical

Objective: The diagnosis of Crohn’s Disease and intestinal tuberculosis in the same patient is an extremely rare condition in medicine. Objective is to demonstrate the association of Crohn’s disease and intestinal tuberculosis in the same patient and in the same lesion, through the presence of bacillus in the Crohn lesion.

Methods & Procedures: Observational retrospective cohort study design was used for data assessment, between January 2003 and March 2014. The 8 patients that were assessed came from private practice. The eligibility criteria include subjects that have been diagnosed with Crohn’s disease and tuberculosis at the same gastrointestinal lesion. Eight subjects were eligible and all gave an informed consent to participate in the study. All patients completed the follow up. Before the study began all patients were exposed to tuberculosis. Four of them took contaminated milk in Africa and the other four have a family history of pulmonary tuberculosis and reside in Latin America. Immunohistochemical diagnosis of Crohn’s Disease and intestinal tuberculosis were done.

Results: The patients were treated according to guidelines for both disorders that resulted in therapeutic success and clinical improvement and are currently in the 10 year follow-up. The current study shows the association between intestinal tuberculosis and the triggering of Crohn’s Disease, since most patients refer no previous illness.
Conclusions: In conclusion, investigation of patients with suspected Crohn’s Disease should always include differential diagnosis with intestinal tuberculosis, especially in patients that travelled to or are originally from endemic areas.

101URO

**Robotic Hemi-Nephroureterectomy in a Completely Duplicated Renal Unit**

Kyle Brian Basham, MD; Wesley White, MD

University of Tennessee Medical Center - Knoxville

Objectives: Renal duplication anomalies, either partial or complete, affect 0.8 – 5% of the population, resulting in a spectrum of anatomical configurations. They represent one of the most common congenital anomalies of the urinary tract. It is characterized by an incomplete fusion of upper and lower pole kidney moieties. A partial duplication is more common than complete. In complete duplication, there are two complete ureters, usually with one or both inserting into ectopic locations. This can give rise to obstruction, ureteral reflux, incontinence, recurrent urinary tract infections, and a host of other clinical pathology. Our goal is to present a methodical and reproducible example for performing a robotic-assisted, minimally invasive laparoscopic right upper pole heminephroureterectomy in a completely duplicated right renal system.

Methods: We present a robot-assisted, laparoscopic right upper pole heminephroureterectomy, highlighting the key steps to performing the procedure safely and efficiently with special focus on the nuances that separate this procedure. We provide narration and bulleted slides as audiovisual aids.

Results: We perform the procedure without unforeseen intraoperative or postoperative complication. The procedure is completed in just over three hours. Final surgical pathology confirmed the diagnosis of an atrophic kidney with ureter and no evidence of malignancy. As expected, the patient’s flank pain and recurrent urinary tract infections resolved.

Conclusions: Robotic right upper pole heminephroureterectomy is safe and effective. As has been demonstrated in this video, the articulating capabilities of the robot offer a distinct benefit over a standard laparoscopic approach in this setting.

102GS

**Management of a Hiatal Hernia After Gastric Bypass with a Bioabsorbable Mesh**

Benjamin Clapp MD
Texas Tech School of Medicine

Background: Reflux generally resolves after a laparoscopic gastric bypass but there is an entity of late reflux after bypass. This is usually when the gastric pouch migrates into the chest and associated with a hiatal hernia.

Description of video: This video is a case presentation of a bypass patient 13 years out with onset of reflux over the last two years. She has had two episodes of aspiration pneumonia also. The video starts with the dissection of the gastric pouch from the diaphragmatic crura. It also highlights the importance of dissecting off
the remnant stomach. A pemrose drain is used for atraumatic manipulation of the gastric pouch. The crura are repaired posteriorly with a modified bioabsorbable pledget and reinforced with a bioabsorbable mesh. The last part of the video shows the resection of the “candy cane” deformity of the gastrojejunual anastomosis.

Conclusions: Symptomatic hiatal herniae after gastric bypass should be repaired, and can be safely done with a laparoscopic approach.

103GS

Minimally Invasive Robotic Salvage Cholecystectomy: A Case Series

Irument Nawaz Khan, MD PhD; Kenneth Leung, MD; Sabino Zani Jr, MD

Duke University Medical Center

Introduction: Since its introduction in 1997, robotic surgical technique has been adopted for various surgical procedures including cholecystectomy. Robotic surgery offers various technical advantages over laparoscopic surgery that are especially important when dealing with complex cholecystitis: including 1) improved visibility with three dimensional binocular imaging; 2) greater stability and precision via a tremor filter; 3) better manipulation and accessibility in difficult angles through increased wrist action; 4) better ergonomics as the operator is allowed to work in a sitting position facing forward; and 5) decreased surgeon fatigue particularly when operating on obese patients where the surgeon no longer has to hold tension against the thick abdominal wall.

Methods: We present a case series of four patients with complex cholecystitis, prior failed surgeries and challenging underlying intra-abdominal anatomy who underwent successful completion cholecystectomy using the robotic approach.

Results: Robotic surgery allowed improved manipulation through the adhesions, inflammation and abnormal anatomy of these patients, without having to convert to open. There was complete resolution of symptoms, with no postop complications and early recovery in all four patients.

Conclusion: We propose that the current management pathway for cholecystitis should consider robotic cholecystectomy as an adjunct or alternative choice when presented with patients who have complex cholecystitis, previous aborted surgeries, challenging underlying anatomy and are at a high risk of conversion to open. In selected patients with complicated cholecystitis a robotic approach may be beneficial compared to either a laparoscopic or open procedure.

104GS

Laparoscopic Management of Perforated Gallbladder After Displacement of Percutaneous Cholecystostomy Tube

Benjamin L. Clapp, MD; Sabino Lara

Texas Tech School of Medicine
Introduction: This video highlights the management of a perforated gallbladder after dislodgement of a percutaneous cholecystostomy tube. The tube was supposed to be placed in a transhepatic manner but when pulled out accidently by the patient, he developed peritonitis. He underwent a laparoscopic exploration with removal of his gallbladder, an intraoperative cholangiogram, laparoscopic washout and an on table ERCP.

Description of Video: The video starts with a case report. The patient is a 68 year old male with multiple medical problems (CABG, CAD, HTN, ITP, thrombocytopenia) who developed acute cholecystitis but was not cleared by cardiology for surgery. His cholecystitis resolved but after 4 weeks he accidently pulled out the cholecystostomy tube. He did well for one day but then came to the hospital with a WBC of 16,000, a CT that showed free fluid in the RUQ and he had peritoneal signs on exam.

The operative portion of the video shows the hole in the gallbladder, with subsequent cholecystectomy and the on table ERCP images.

**105GS**

**Laparoscopic Morgagni Hernia Repair**

Rafael Garza Castillon Jr., MD; Eitan Podgaetz, MD; Rafael S. Andrade

University of Minnesota

Objective: Describe the technique for laparoscopic repair of an incarcerated Morgagni hernia.

Methods: 34 year-old female with a past medical history of alcoholic cirrhosis and liver failure and a history of chronic, intermittent, right upper and epigastric abdominal pain. A laparoscopic cholecystectomy was performed at an outside institution with no relief of symptoms. CT scan of the chest and abdomen showed a Morgagni hernia with colon inside the hernia sac without signs of incarceration. Elective surgery was recommended, but the patient suffered another episode of acute abdominal pain and a second CT scan revealed an incarcerated Morgagni hernia containing fat and omentum.

Procedure: We describe our laparoscopic approach for reduction and correction of a Morgagni hernia, making special emphasis on our diaphragmatic stitch technique using #2 braided polyester sutures with pledgets in horizontal mattress stitches.

Results: There were no intra or postoperative complications. The postoperative chest x-ray showed no evidence of pneumothorax, and there was no need for a thoracic tube. She had a favorable postoperative course with resolution of abdominal pain. She was discharged home on oral pain medication on postoperative day 3.

Conclusion: Laparoscopic primary repair of small to medium size incarcerated Morgagni hernias is safe and effective.
There Are Differences Between the Right and Left Laparoscopic Adrenalectomy? Our Experience

Vincenzo Neri Prof Dr Med
University of Foggia, Italy

Objective: Laparoscopic approach is the “gold standard” for the removal of benign and selected malignant adrenal pathologic masses. The aim is to determine retrospectively if there are different outcomes between the right and left laparoscopic adrenalectomy (LA)

Methods & Procedures: From September 2010 to September 2015 forty-two LA, twenty-one right and twenty-one left. We compared the results between right and left LA with lateral transperitoneal approach. Indications to LA were: functioning neoplasms in 19 patients (Conn’s syndrome, Cushing’s syndrome, pheocromocytoma) and non-functioning neoplasms in 22 patients (cortical adenomas, myelolipomas, oncocytomas). Variables compared include age, BMI, ASA score, operative time, estimated blood loss, conversions, gland and tumor size, hospital stay, peri and postoperative complications. Data evaluation by Mann-Whitney U-test and Fisher exact test (C.I. p < 0.05)

Results: Demographic data were comparable between the two groups. The comparison of BMI (p = 0.393), ASA score (p=0.245), did not show significant differences. Other non-significant results were tumor size (p=0.113), gland size (p= 0.168), postoperative ambulation (p=0.142), hospital stay (p=0.452), conversion rate (p=0.116). Also perioperative (p=0.5) and postoperative complications, within 30 days (p=0.697), had not significant differences. We report statistically significant differences in mean operative time, major for the left site (p=0.012) based on more complex anatomic dissection, and an estimated blood loss, major for the right site (p=0.006), in this experience due to intraoperative accidental bleeding.

Conclusion: We report more complex anatomic dissection in left LA however in the overall perspective no significant differences in postoperative outcomes between right and left LA.

Laparoscopic Hernia Repair in Cirrhotic Patients in Presence of Ascites; The Texas Endosurgery Institute Experience

Roberto Alatorre Adame, MD1; Morris E. Franklin Jr.2; Jeffrey L. Glass2; Mark Glover2; Adebukola Adedeji2

1Hospital San José / TEC de Monterrey, 2Texas Endosurgery Institute

Background: Patients with a cirrhotic liver accompanied by ascites show an increased incidence rate of inguinal hernias in comparison to the general population. There is currently no consensus for optimal surgical management of this presentation.

Methods: A retrospective review of prospectively collected data of patients with symptomatic inguinal hernia in presence of ascites and a review of current practice.
Results: Between 2009 and 2015, we had 4 patients with symptomatic inguinal hernia in the presence of ascites. One of the patients presented at the Emergency Room with acute pain and small bowel obstruction symptoms, with no bowel resection needed during the surgery.

Conclusion: Despite the widespread adoption of laparoscopy for the management of a wide array of abdominal procedures, this approach appears to be underutilized in the treatment of inguinal hernia in presence of ascites. We think this approach is safe and offers the well-known benefits of laparoscopic surgery. Key words: cirrhosis, ascites, inguinal hernia

Bovine Pericardium Laparoscopic Herniaplasty of Indirect Inguinal and Femoral Hernia; Long-Term Outcomes

Andrew Dobradin. MD PhD1; Karleen Meiklejohn, BSc2; Julius Agyeman Manu, BSc2

1University of Central Florida, 2St. Matthew's University Medical School

Introduction: Groin hernia repair is a commonly performed procedure and many approaches can be employed in this repair. The need for minimal post-operative pain and faster recovery time favors the tension free laparoscopic repair technique in using an allograft implant. However, the rate of recurrence after a groin hernia repair still remains a challenge. In our study, we report the novel use of the bovine pericardium in both indirect inguinal and femoral hernia repair. The degree of post-operative pain, hernia recurrence rate, and overall patient satisfaction will also be reported.

Methods: Implantation of bovine pericardium was used in 18 patients who underwent laparoscopic hernia repair (16 indirect inguinal and 2 femoral hernias). Four cases were performed emergently for incarcerated hernias, of whom 3 patients required small bowel resection. The patients were followed over an average period of 3 years 9 months. The group was comprised of 13 men and 5 women between the ages of 19 and 82 with 57.5 years as the mean age. The average duration of the hernia repair surgery was 54.8 minutes (between 25 and 86 minutes).

Results: Only 44% of the patients required pain medication more than 24 hours postoperatively. Majority of the patients returned to their preoperative physical activity level within the first week after surgery. There was only one reported hernia recurrence reported.

Conclusion: Bovine pericardium graft can be used effectively in laparoscopic preperitoneal and transperitoneal repair of indirect inguinal and femoral hernias. The outcomes were excellent in both elective and emergency cases.

The Need for a Laparoscopic Skills Training Programme for Junior Surgeons in the United Kingdom

Ary Phaily, MBBS1; J. Thomas2; A. Ali3; A. Robinson3
Objective: Surgery has been revolutionised by the introduction of minimally invasive procedures such as laparoscopy. The rapid spread and dissemination of these procedures has left many surgical education programmes struggling to catch up to the advances, especially in the face of nascent robotics technology. Currently, there exists no generally accepted laparoscopy training programme for junior surgical trainees in the UK. This article assesses the feasibility of such a programme and highlights its benefits and drawbacks.


Results: Current programmes such as the Fundamentals of Laparoscopic Surgery (FLS) and the Danish model focus heavily on formative assessment and certification. An outline of a novel laparoscopic surgery training programme is proposed. By the end of the programme, improvements will be seen in the following domains: spatial awareness, hand to eye co-ordination, efficiency of movement and tissue handling. Initial cost implications will be offset by development of the minimally invasive simulation suite and training courses for external applicants as a source of funding.

Conclusion: As advances in technology and its applications in surgery are accelerating, early formal training in new surgical techniques is not only recommended but necessary. Early training and adoption will enable surgeons to better adapt to future innovations in minimally invasive surgery.

111GYN

Laparoscopic Management of Tubo-ovarian Abscess in Second Trimester of Pregnancy After Transvaginal Oocyte Retrieval

Maria Andrikopoulou, MD, PhD1; Radu Apostol, DO2; Ashley Becker, MD MBA1; Farr R Nezhat, MD1, 3

1Department of Obstetrics and Gynecology, Winthrop University Hospital, Mineola NY; 2Department of Obstetrics and Gynecology, Coney Island Hospital, Brooklyn NY; 3New York-Presbyterian/Weil Cornell, New York, NY

Objective: We present a case of tubo-ovarian abscess in second trimester of pregnancy which was managed laparoscopically and resulted to a full term delivery. A 39 year old primi gravida, at 16 weeks gestation, presented to the emergency room with new onset of severe, diffuse lower abdominal pain associated with nausea and vomiting. Her medical history was significant for infertility and ovarian endometrioma at the time of oocyte retrieval. Current gestation was complicated by an emergent diagnostic laparoscopy with drainage of a ruptured endometrioma in the first trimester. On physical examination, she was found to have an acute abdomen and sonogram revealed a live pregnancy and a 10cm left adnexal mass, suspicious for ovarian torsion.

Methods/Procedure: Emergent exploratory laparoscopy was performed with aspiration of approximately 3 liters of abdomino-pelvic pus, aspiration of left ovarian abscess, bilateral ovarian cystectomies and extensive lysis of adhesions. Operative time was 74 minutes and estimated blood loss 20 cc.
Result: Post-operatively, she was closely observed in the intensive care unit and she was discharged home on post-operative day 8. She delivered a viable male infant at 39 4/7 weeks via cesarean delivery secondary to arrest of dilation.

Conclusion: There are very few reports in the literature of laparoscopic treatment of tubo-ovarian abscess complication of transvaginal oocyte retrieval, which resulted in term delivery. We believe that laparoscopy should be considered in all cases of first and second trimester in pregnancy for management of TOA in the hands of a skilled laparoscopic surgeon.

112GS

**Robotic Pancreatic Necrosectomy and Cystgastrostomy**

Samuel L Douglas, MD; Marco Ferrara, MD

Baptist Health System

Objective: Demonstration of the safety and efficacy of performing a pancreatic necrosectomy and cystgastrostomy utilizing the robotic platform.

Methods & Procedures: Patient is a 65 year old male with history of alcohol abuse and gallstones who presented with necrotizing pancreatitis with subsequent development of pseudocysts. He underwent corrective surgery with necrosectomy and cystgastrostomy creation utilizing the robotic platform and intra-operative ultrasound.

Results: The patient did well post-operatively and was discharged on post-op day. He was without symptoms at his 2 week post-operative visit.

Conclusion: A demonstration of the safety and feasibility of performing a robotic pancreatic necrosectomy with cystgastrostomy. Intraoperative ultrasound was used to localize the pancreatic pseudocyst and the cyst gastrostomy created via traditional techniques. Necrosectomy with cystgastrostomy can be performed robotically and is yet another tool to add to the surgeon’s armamentarium.

114GYN

**Ovarian Cancer Laparoscopic Hysterectomy and Staging in a Patient with History of Intraperitoneal Renal Transplant**

Maria Andrikopoulou, MD, PhD1; P. Vetere, MD1; F.R Nezhat, MD1, 2Winthrop University Hospital, New York-Presbyterian/

1Winthrop University Hospital, 2Weil Cornell

Objective: Ovarian cancer laparoscopic staging in a patient with intra-peritoneal renal transplant and history of bilateral nephrectomies
Methods: 43 year old female with history of bilateral polycystic kidneys and right renal transplantation, presented for consultation status post exploratory laparoscopy, dilation and curettage and bilateral ovarian cystectomies. The pathology report revealed high grade serous adenocarcinoma of both ovary and uterus. The patient was asymptomatic with benign examination. PET CT of chest/abdomen/pelvis showed area of metabolic activity in left ovary suggestive of malignancy as well as increased focus of right common iliac pelvic lymph nodes, suggestive of metastasis. The decision was made for laparoscopic hysterectomy and optimal staging.

Results: The operation was challenging secondary to the kidney transplant which was firmly adhered to the uterus. The estimated blood loss was 100 cc and the patient was discharged in post-operatively day 1. The final pathology showed stage IIc ovarian serous adenocarcinoma with clear cell features, with no involvement of the uterus.

Conclusion: Laparoscopy and staging for ovarian cancer can be safely performed in challenging cases in hands of a skilled laparoscopic surgeon.

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115 GYN

Acupoint Catgut-Embedding Significantly Improve the Urinary Retention After Radical Hysterectomy

Xiao Jing, MD PhD1; Jing Wen, MD2; Fan Wu, MM1; Xiaofeng Chen, MM1; Xiangdan Hu, MD1; Yanmei Sun, MM1; Haixia He, MM1; Qimghua Huang, MM11

Guangdong Provincial Hospital of Traditional Chinese Medicine; 2Dong guan Da ling shan Hospital

To observe the acupoint catgut-embedding therapy effect on the urinary retention after radical hysterectomy.

Methods: Ninety-nine cases of cervical cancer after C2L2 radical hysterectomy were randomly and equally assigned to three groups. The blank group applied routine therapy after surgery. The Acupoint Catgut-Embedding (ACE) group applied acupoint catgut-embedding therapy on both Shenshu (BL23), Pangguangshu (BL28), Zusanli (ST36), Sanyinjiao (SP6), Yinlingquan (SP9) in 24 hours after the operation. The western medicine group adopted the tamsulosin hydrochloride capsule since 5 days after surgery till their bladder function return to normal. The rate of urinary retention and urinary system infection, residual urine volume, reset rate of urine tube were compared between the three groups.

Results: 1. The urinary retention incidence rate of the ACE group was obviously lower than other two groups (P<0.05). 2. The residual urine of the ACE group without any significant difference between the western medicine group (P>0.05), but both of them compare with the blank group, the residual urine decreased (P<0.05). 3. The rate of urinary system infection reset rate of urine tube of the ACE group and the western medicine group were obvious lower than the blank group (P<0.05).

Conclusions: Acupoint catgut-embedding would effectively reduce bladder residual urine volume, decrease the rate of urinary retention and the risk of urinary tract infection and get a better recovery of bladder function.
Laparoscopic Repair of a Bochdalek Diaphragmatic Hernia

Zachary Laucis, DO; Daniel Bacal, MD

Beaumont Health

With the ever evolving and advancing field of laparoscopic surgery, larger and more technical surgeries are becoming a safe, realistic option for patients. Our goal is to demonstrate that the laparoscopic repair of a Bochdalek hernia is feasible, safe for the patient and a durable repair.

We offer a case of a 63 year-old female with a known large subdiaphragmatic hernia and hypertension that presented to the Emergency room with left upper quadrant abdominal pain, nausea and diarrhea. The patient had an office visit scheduled within a month, but due to pain, she could not wait. After evaluation, it was decided to take the patient to surgery to repair the hernia laparoscopically. When we entered the abdominal cavity, we found a 6x5cm diaphragmatic defect in which her left colon was herniated into her thoracic cavity. The colon was able to be reduced from the thoracic cavity. The defect was found to be repairable without being under a great amount of tension. The edges of the defect were first closed in at AP fashion using permanent braided suture with seamguards as pledgets for added strength. Next, a PMI suture was thrown underneath rib 12 to reinforce the defect. A piece of biologic mesh was placed over the repair and secured using permanent braided suture for additional strength.

The patient received without any adverse events and discharged home. Subsequent office visits have no revealed long-term complications.

This case demonstrates that a Bochdalek can successfully be repaired using laparoscopic techniques.

Portal Vein Thrombosis After Sleeve Gastrectomy

Osama Shaheen, MD1; Jacqueline Ralph PA-C1; Bala Thatigotla MD FACS2 ; Dang Tuan Pham MD FACS1

1Sisters of Charity Hospital Buffalo/NY; 2Niagara Falls Memorial Medical Center

Objective: Until recently portal vein thrombosis (PVT) has been considered an uncommon complication in general surgery, nevertheless with the advance of the popularity of sleeve gastrectomy as a bariatric procedure we have seen an increase in the occurrence of this complication.

Methods & Procedures: To help elucidate the question whether this is a procedure related complication, and how to prevent and treat this condition, we did the widest literature review of 65 patients who had PVT after sleeve gastrectomy and two cases will be reported in this article as well

Results: The incidence of PVT after sleeve gastrectomy varies from 0.2% to 1% and a hematologic abnormality was reported in 17.6% to 41% of the cases respectively. Abdominal pain was the most common presenting symptom and the date of onset ranges from 3 to 42 days postoperatively. Exploratory laparotomy for bowel ischemia or infarction was reported in 7 patients and therapeutic anticoagulation was used in all cases; only
one patient underwent transhepatic portal infusion of streptokinase. Two splenectomies were reported related to infarction and active bleeding hematoma, and one case reported severe liver infarction ended by death.

Conclusion: When the leak is ruled out, PVT should be always kept in mind in any acute abdominal pain that happened after sleeve gastrectomy. The difference in the thrombotic tendency between populations may affect the incidence of PVT. Interventional or surgical vascular procedures should be ordered in the case of failure of medical management to prevent the occurrence of serious complications.

118URO

**Calcified Intravesical Foreign Body: Endoscopic Removal Using a Minimally Invasive Percutaneous Cystotomy**

Dario Garcia-Rojo, MD; Jesus Muñoz, MD; Marta Capdevila, MD; Eduardo Vicente, MD; Jose Luis Gonzalez-Sala, MD; Younes Fadil, MD; Victor Parejo, MD; Juan Prats, MD

Corporacio Parc Tauli. Sabadell. Universitat Autonoma Barcelona

Objective: The etiology of bladder foreign bodies may include iatrogenic, urethral self-insertion, penetrating trauma and migration from adjacent organs. For removal foreign bodies they have been used various methods: open surgery, endoscopic transurethral treatment, laparoscopic approach or extraction by percutaneous cystostomy. We present a case of calcified bladder foreign body treated using percutaneous suprapubic cystolithotripsy and removal of bladder foreign body.

Methods & Procedures: A 71 years-old male patient presented in our clinic with six months history of frequency, hematuria and chronic pelvic pain. Pathological antecedents: External radiation therapy for prostate carcinoma. Transurethral prostatic resection. Acute urinary retention by multiple Urethral stricture which required placement of percutaneous cystostomy and subsequent urethral pneumatic dilation. Urethrocystography: possible foreign body bladder. Abdominal CT: bladder stone and possible bladder foreign body. Due to the history of urethral stenosis, we propose a percutaneous suprapubic cystolithotripsy and removal of bladder foreign body.

Results: Urethro-cystoscopy sowed a calcified foreign body (cystostomy catheter) with a 2 cm bladder stone. We practice a suprapubic puncture and placement a metallic guide and dilatation of skin and bladder wall with Alken dilators. We place of a Amplatz sheath. Suprapubic lithotripsy of bladder calculi and removal of the urethral catheter was performed. The patient was discharged the next day after surgery.

Conclusion: The method described is a safe and quick method for endoscopic lithotripsy of bladder calculi. It is a useful procedure in patients with calcified bladder foreign bodies with urethral stenosis and in children affected by bladder stones

119GYN

**Incidence of Oophorectomy in Total Laparoscopic Hysterectomy Versus Vaginal Hysterectomy. A Better Approach Advantage?**
Total laparoscopic hysterectomy is thought to be superior to vaginal hysterectomy in its ability to provide better anatomical views and performance of concomitant procedures. Leading us to the surgical findings of ovarian pathology.

The objective of this study is to evaluate the incidence of oophorectomy and ovarian pathology comparing vaginal versus laparoscopic hysterectomy. A case-controlled, retrospective analysis in the TECSalud system in Monterrey, Mexico. We analyze a total of 244 total laparoscopic hysterectomies and 170 vaginal hysterectomies from January 2007 to January 2015. (n= 414). Data was gathered from electronic and physical records.

The incidence of oophorectomy in vaginal hysterectomy group was 5.2% and in total laparoscopic hysterectomy was 11.0% (p 0.054). The incidence of oophorectomy in patients with less than 50 years was 1.1% for vaginal and 8.1% for laparoscopic.

The surgical finding of ovarian cancer was positive in two cases in the laparoscopic group and no cases in the vaginal group. (p0.50). The incidence of salpingectomy in both groups was 2.3% in vaginal versus 22.5% in laparoscopic hysterectomy. (p 0.0001).

An advantage of the laparoscopic approach is that we are able to perform a better visualization of the pelvic structures, guiding us the decision of removing one or two ovaries during the procedure. Oophorectomy rather than salpingo-oophorectomy is easily carried out through the vagina. Oophorectomy requires an excision margin through the ovarian hylum and leaves the possibility of partial oophorectomy. Thus, probably affecting the incidence of remnant ovary syndrome and ovary cancer on the future.

121GS

Laparoscopic Partial Splenectomy and Drainage of Splenic Abscess

Gustavo L. Carvalho, MD PhD; Gustavo Barros Alves de Carvalho; Yukie Correia Konishi; Diego Laurentino Lima, MD; Flavio Carvalho Santos Filho; Vladimir Goldstein de Paula Lopes

Universidade de Pernambuco

Male patient, 58 y/o, admitted to GICU with septic shock secondary to pneumonia and renal failure which led to hemodialysis. During treatment of pneumonia, several antibiotics were used, one of them being an antibiotic containing a combination of piperacillin and tazobactam and probably because of its use, he developed a severe hemolytic anemia, requiring SIX blood transfusions. After 41 days of hospitalization, he was discharged in good conditions, however, he returned to internal medicine outpatient clinic after 10 days with new onset of severe sepsis.

After hospitalization, unfortunately, once more piperacillin-tazobactam was used for 6 days. The patient developed daily fever, complains of strong pain in the left hypochondrium and intense gas bloating.
Once again a strong hemolytic reaction occurs, needing 4 transfusions, confirming that piperacillin-tazobactam was responsible for the hemolytic anemia. Antibiotics were changed to imipenem and daptomycin and that schema has been used for the last 5 days. He kept high leukocytosis, however without fever.

Because of the persistence of abdominal pain, USG and CT scan were performed whose findings were a voluminous collection of irregular contours with an approximate volume of 1200 ml in the splenic area. Today he was submitted to an emergency laparoscopic surgery. Passed two days after laparoscopy drainage and partial splenectomy, the patient doesn't have fever or other symptoms except for tachycardia (108 heart rate). The drainage is 175ml per day of pus and laboratory findings is similar to before surgery: high level of WBC 26,000 and low hemoglobin 6.9 (before surgery was 7.5). Antibiotic therapy is imipenem and daptomycin.

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122GYN

**A Comparison of Different Endometrial Pretreatments Prior to TCRP**

Zhi Fang Chen, MD PhD

Xinjiang Medical University/First Affiliated Hospital

Objective: To compare the effects of different endometrial treatments prior and after to tranncervical resection of polyps (TCRP)

Methods: 400 patients who had diagnosed endometrial polyp (EP) by hysteroscope were randomly divided into three groups: A group (medical pretreatment); B group (mechanical pretreatment) and C group. A group was also divided into three groups: A1 group (gestrinone); A2 group (GnRH-a) and A3 group (gossypol). The endometrial thickness and the numbers of endometrial glands near the basal layer were measured, No menses rates and duration of operation was calculated.

Results: Endometrial thickness with A1, A2, A3 and B groups were less than C group (P<0.05), endometrial thickness with A2 groups was less than A1 and A3 groups (P<0.05), The numbers of endometrial glands near the basal layer with A1, A2 and A3 groups were lower than that in the B and C groups (P<0.05) (P<0.05). The numbers of endometrial glands near the basal layer and with A2 group were lower than that in the A1 and A3 groups (P<0.05). Duration of operation with A2, A2 and A3 were shorter than that with B and C; No menses rates with A1 group (41.6%), A2 (23.3%) and A3 (27.5%). TCRP combing GnRh-a gestrinone or gossypol was more effective than TCRP only, no difference in the three combing groups.

Conclusion: Endometrial treatment before and after TCRP will enhance the effects of operation.

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123GYN

**Double Circular Stapler Technique (DCST) for Bowel Resection in Rectosigmoid Endometriosis Avoiding Segmentary Resection**

Claudio Peixoto Crispi Jr., MD; Claudio Crispi, MD Crispi Institute of Minimally Invasive Surgery
Classically, we have three types of bowel resection in the treatment of endometriosis: shaving, single-load circular stapler technique and the rectosigmoidectomy. Recently, Oliveira and Crispi developed the DCST.

The DCST allows the excision of larger endometriotic nodules than the single-load technique can perform, avoiding the need of a major intestinal resection, as a segmentary resection.

We have performed 532 laparoscopies due to endometriosis between January 2010 and December 2015, 236 had bowel involvement. 22 DCST were performed, compared to 62 single-load stapler technique, 86 shavings and 66 rectosigmoidectomies (segmentary resection) to achieve the maximum cytoreduction of intestinal involvement.

Major complications, such as: urinary retention, fistula or anastomosis leak were rare. And comparing all the groups no statistical significance was found between the groups about the relative risk of these complications.

The DCST is feasible and safe procedure, when used to treat some specific cases of bowel nodule of endometriosis, that the single-load circular stapler can not do, without the need of a segmentary resection.

124GS

**The Role of Robotic Surgery in Partial Splenectomy.**

Catalin Vasilescu, Prof Dr Med; Monica Lacatus, MD, PhD; Stefan Tudor, MD, PhD; Simona Manciu, MD; Bogdan Trandafir, MD; Laura Costin, MD

Fundeni Clinical Institute

Objective: Advances in medical technology, especially robotic systems, have made minimally invasive partial splenectomy a preferred treatment for hereditary spherocytosis and splenic cysts, having the benefits of preserving the immune function of the spleen.

Methods & Procedure: 530 elective minimally invasive splenectomies were registered in our department between January 1995 and December 2015; 433 laparoscopic and 97 robotic splenectomies. Subtotal/partial splenectomy (55 cases: 26 laparoscopic and 29 robotic) were performed for: hereditary spherocytosis, splenic hydatic cysts, splenic non-parasitic cysts and beta thalassemia. Differences between intra and post-operative parameters of laparoscopic and robotic approaches were further investigated.

Results: The robotic approach in partial splenectomies when compared with laparoscopy has shorter operative time (82.15 min vs. 99.5 min; p<0.05) with a median operative time until full exposure of the splenic vascular anatomy of 15 minutes in the robotic group, compared with 30 minutes in laparoscopic group (p<0.05); decreased blood loss (30.88 ml vs. 156.9 ml; p<0.05), lower conversion rate and lower postoperative morbidity rate. It also allows for a better evaluation of the splenic remnant in subtotal splenectomy as shown by the postoperative imaging control.

Conclusion: Current robotic systems will probably not replace laparoscopy for most common indications of splenectomy like ITP, hemolytic anemia. Partial/subtotal splenectomy seems to be a suitable candidate for robotic surgery, requiring a delicate dissection of the splenic vessels. Robotic partial/subtotal splenectomy is comparable to laparoscopy in terms of hospital stay, with a better evaluation on the splenic remnant volume.
**Reproductive Outcome of Patients With Early Stage Cervical Cancer After Fertility-Sparing Surgery in Mainland China**

Huiqun Wang, MD1; Xianbo Fu, MD PhD2; Xiaowei Zhang, MD PhD2; Heqiong Li, MD2; Xiaoming Shao, MD2; Yuying Yang, MD2; Wei Song, MD2

1Peking University Third Hospital; 2Chinese Journal of Minimally Invasive Surgery

**Objective:** To investigate the reproductive outcome of the young patients with early stage cervical cancer after fertility-sparing surgery in Mainland China.

**Methods:** By retrieving concerned literature published until January 2016, 1287 cases in 33 papers reporting pregnancy or abortion outcome after fertility-sparing surgery were reviewed. Among them, 209 cases performed cervical conization, while 1078 cases performed laparoscopic, vaginal, or open radical trachelectomy combined with pelvic lymphadenectomy.

**Results:** 209 cases of conization including FIGO stage 0 in 33 cases, IA1 in 150 cases, IA2 in 4 cases, IB1 in 19 cases, and IB2 in 3 cases were reported in 5 papers. The recurrence rates were 0 to 4% (1/26). The pregnancy rates were 22% (6/27), 47% (7/15), 83% (5/6), 2/2, and 2/2, respectively. 22 cases got 24 times of pregnancy (11%, 22/209), and abortion occurred in 2 cases. 1078 cases of radical trachelectomy including FIGO stage IA1 in 123 cases, IA2 in 289 cases, IB1 in 641 cases, and IB2 in 25 cases were reported in 28 papers. No recurrence was founded in 341 cases (18 papers). The recurrence rates reported in the rest 10 papers were 1.9% (1/53) to 27% (13/48). Among 906 patients without contraception during follow-up period, 292 cases (32%) got 296 times pregnancy, with 23 cases of abortion.

**Conclusions:** For the young patients with early stage cervical cancer, fertility-sparing surgery can be performed, and about 1/3 patients can get a healthy baby. Supplementary therapies include radio- and chemotherapy are needed in certain patients to avoid recurrence.

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**Marginal Ulcer After Gastric Bypass: Early or Late Complication?**

Benjamin L Clapp, MD; Javier Jacob Flores, BS

Texas Tech School of Medicine

**Background:** Marginal ulcer formation after gastric bypass is a well know complication. It is generally thought to occur early in the post-operative course, usually within 4-6 weeks. This complication usually results in pain but can also result in bleeding or perforation. Here we examine a single surgeons experience with marginal ulcer formation, specifically the average time from surgery.
Methods: This is a retrospective case series that is obtained from a prospectively maintained database. The database was examined for all cases of marginal ulcer formation after laparoscopic gastric bypass with a hand sewn anastomosis with absorbable suture. There were no open cases included. The time period was 2011-2015 and covered 429 cases. Variables examined included time from surgery to ulcer formation, need for transfusion, NSAID use, smoking status, sex and age.

Results: Fourteen patients (3.2%) out of 429 were found to have marginal ulcer formation. The average time to ulcer was 8.8 months, however the mode was one month. There were only 3 cases that occurred over a year from surgery. Dropping these cases out leaves an average time of 2.2 months. There were 9 females and 5 males. Two of the patients were smokers and 25% were using NSAIDs. One patient presented with a perforated ulcer at the gastrojejunal anastomosis and one patient required a blood transfusion.

Conclusions: Marginal ulcer formation is usually a mid-term complication with an average of 2 months to occurrence. However, the surgeon should be aware that there can be marginal ulcer formation even out to 5 years.

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**127GYN**

**Laparoscopic Repair of Cesarean Scar Defect**

Lindsey Grace, MD; Camran Nezhat, MD

Center for Minimally Invasive and Robotic Surgery, Palo Alto, CA

Objective: To demonstrate a laparoscopic repair of a cesarean scar defect and educate individuals on the diagnosis of cesarean scar defects; including the presenting signs and symptoms to be aware of, methods for diagnosis and treatment options.

Methods: A single patient’s surgical procedure was used to demonstrate the surgical technique used to repair a cesarean scar defect.

Results: Demonstrate that cesarean scar defects can be adequately repaired using the techniques of hysteroscopic identification, mapping of the defect with a cervical dilator, excision of the defect with cautery or sharp dissection, and repair of the healthy myometrium.

Conclusion: It is feasible to uses traditional laparoscopy for repair of cesarean scar defects.

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**128GYN**

**Laparoendoscopic Single Site (LESS) Surgery in Gynecology: A Surgeon’s Experience of 1293 Cases**

Tae-Joong Kim, MD1,*, Tae-Hyun Kim,MD2, Eun-Jin Heo, MD3, Yoo-Young Lee, MD1, Chel Hun Choi, MD1, Jeong-Won Lee, MD1, Byoung-Gie Kim, MD1, Duk-Soo Bae, MD1

1Departments of Obstetrics and Gynecology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea; 2Departments of Obstetrics and Gynecology, Konyang University Hospital, Daejon,
Objective: To present 1293 LESS surgeries and analyze the perioperative outcomes and late complications.

Methods & Procedures: Prospective single-center study was performed at Samsung Medical Center in Korea. A single surgeon (TJ Kim) performed 1293 consecutive cases of LESS surgery from May 2008 to December 2014.

Results: 1293 cases comprised 612 hysterectomies, 214 adnexitomies including oophorectomy, salpingectomy, and salpingo-oophorectomy, 335 ovarian cystectomies, 101 myomectomies; 16 staging operations and 15 others. The median age and body mass index of the patients were 43 years and 22.1 kg/m2, respectively. LESS surgery was successfully completed in 1264 patients (97.8%). Twenty-four patients (1.86%) needed one or more additional ports and 5 cases (0.38%) were converted to laparotomy. Additional ports were required most frequently in ovarian cystectomy (14/24, 58.3%). Forty-four patients (3.4%) required intraoperative and/or postoperative transfusions. Most of these patients underwent hysterectomy (43/44, 97.5%). Perioperative complications (<30 postoperative days), excluding transfusion, occurred in 22 patients (1.7%); that included one case each of vault bleeding, vault abscess, stump watery discharge, vessel injury, 2 cases of bowel injury, 3 cases of postoperative bleeding required reoperation, 2 cases of fistula, and 7 cases of urinary tract injury. Late complications occurred in 3 patients (0.2%) and included 2 umbilical hernias and one vault evisceration. Umbilical hernia has not occurred since 2012 when we modified the umbilical closure method.

Conclusion: The rate of late postoperative complications, umbilical port site hernia, was decreased after applying modified suture technique in umbilical closure.

130GS

The Results of Hand Assisted Laparoscopic Appendectomy in Adults

Ali Uzunkoy Prof Dr Med
Harran University School of Medicine

Aim: Acute appendicitis is the most common surgical emergency. Symptoms of acute appendicitis may mimic many other diseases. Laparoscopic intervention helps to diagnose and it is also treatment method. Three or 4 trocars are used in conventional laparoscopic appendectomy. In this study, the results of hand-assisted laparoscopic appendectomy using two trocars was presented.

Methods: Forty-two patients with acute appendicitis were operated on with the method of hand-assisted laparoscopic appendectomy using two trocars. Surgery was performed under general anesthesia and in the supine position. The Veress needle was entered through the umbilicus and 14 mmHg pneumoperitum was created. First 5 or 10 mm trocar was entered through the umbilicus and the diagnosis of acute appendicitis was confirmed. Second 10 or 12 or 15 mm trocar was entered at the point of Mc Burney. The appendix was grasped and taken out of abdomen with grasper passing through a trocar. Appendectomy was performed with classical method.

Results: Laparoscopic procedure was performed in all patients. There was no conversion to open surgery. One additional trocar was needed in 4 cases. In these cases, operative methods were converted to classical three
trocar appendectomy due to very thick mesoappendix. Mean operative time was 43 minutes. There were 3 wound infections. Hospitalization time was 1.4 days. There was no mortality in this series.

Conclusion: Hand assisted laparoscopic appendectomy has same results of conventional three trocar laparoscopic appendectomy. The advantage of this method is more minimally invasive method. We think that it can be safely used in adult population.

131GS

**Robotic versus Laparoscopic Resection for Mid and Low Rectal Cancers**

Abdulkadir Bedirli, Prof Dr Med; Bülent Salman; Osman Yuksel

Gazi University

Background and Objectives: The current study aimed to determine whether robotic low anterior resection (RLAR) has real benefit over laparoscopic low anterior resection (LLAR) in terms of surgical and early oncologic outcomes.

Methods: We retrospectively analyzed data from 35 robotic and 28 laparoscopic LARs, performed for distal rectal cancer, between January 2013 and June 2015.

Results: A total of 63 patients were included in the study. All surgeries were performed successfully. The clinicopathologic characteristics were similar between the two groups. Compared with the laparoscopic group, the robotic group had less intraoperative blood loss (165 vs. 120 ml, P < 0.05) and higher mean operation time (252 vs. 208 min, P < 0.05). No significant differences were observed in the time to flatus passage, length of hospital stay, and postoperative morbidity. Pathological examination of total mesorectal excision (TME) specimens showed that both circumferential resection margin and transverse (proximal and distal) margins were negative in the RLAR group. However, one patient each had positive circumferential resection margin and positive distal transverse margin in the LLAR group. The mean number of harvested lymph nodes was 27 in the RLAR group and 23 in the LLAR group.

Conclusion: In our study, short-term outcomes of robotic surgery for mid and low rectal cancer were similar to those of laparoscopic surgery. The quality of TME specimens was better in the patients who underwent robotic surgery. However, longer time needed was a limitation of robotic surgery.

132GYN

**Complex Gynecological Procedures: Strategies for Vascular Control as Initial Steps**

Gerald A. Feuer, MD1; Nisha Lakhi, MD2

1Northside Hospital; 2Richmond University Medical Center

Objective: To demonstrates steps for initial vascular control to minimize bleeding during complex gynecological procedures.
Methodology: The patient is a 29 year old, para 3, with history of endometriosis now presenting with bilateral large complex adnexal masses. Ultrasound was suggestive of endometriomas. Intraoperative evaluation demonstrated severe endometriosis with obliteration of the rectovaginal septum. She had a robotic hysterectomy, bilateral salpingo-oophrectomy, and excision of all endometriotic lesions. In order to complete the hysterectomy, mobilization of the recto-vaginal septum was necessary. Our technique first involves securing of vascular supply at the uterine arteries as they branch from the hypogastric artery, at the infundibular pelvic ligament, and at the round ligaments. We then lateralize the ureters and enter the para-rectal space bilaterally. The utero-sacral ligaments are divided, and we further develop the para-rectal space to get to an area below the scar plane. This allows us to identify a tissue plane to safely mobilize the scar.

Conclusion: Upfront control of vascular supply, prior to further dissection of tissue, may be beneficial in minimizing blood loss during difficult gynecological procedures. This approach can be useful for endometriosis cases as well as difficult oncology cases.

133GYN

Robotic Upper Vaginectomy after Previous Hysterectomy for Severe Stage IV Endometriosis involving the Vaginal Cuff and Recto-Vaginal Septum.

Gerald A. Feuer, MD1; Nisha Lakhi, MD2

1Northside Hospital; 2Richmond University Medical Center

Objective: To demonstrate a technique for upper vaginectomy in a case of severe endometriosis and scared rectovaginal septum.

Methodology: This is a 35 year old, nulliparous women, with a long history of severe endometriosis requiring multiple previous surgical intervention, including a laparoscopic assisted vaginal hysterectomy 8 years previously for dysfunctional bleeding. She now presented with severe pelvic pain. On pelvic examination she had a 4x4 cm mass at the top the vagina and obliteration of the recto-vaginal septum. The patient underwent a robotic upper vaginectomy to completely excise the endometriosis nodule. We first enter the para-rectal space and develop it distally until we reach a point beyond the scar plane. From this point, we are able to approach the recto-vaginal space and mobilize the scared rectovaginal septum. The ureters are then lateralized and dissected distally to a point past the uterine arteries. We then secure hemostasis at the uterine arteries. We then were able to perform an upper vaginectomy and completely excise the nodule.

Conclusion: The steps for upper vaginectomy with severe endometriosis include dissection of the para-rectal space distally, to then safely take down the retovaginal scar. The dissection of the ureters past the uterine vessels is necessary to divide the utero-sacral and cardinal ligaments.

134GYN

Robotic Gastrocolic and Greater Omentectomy for Debulking of Leiomyomatosis Peritonealis Disseminate

Gerald A Feuer, MD1; Nisha Lakhi, MD2
Objective: This video demonstrates a robotic gastrocolic and greater omentectomy on a patient with Leiomyomatosis Peritonealis Disseminata.

Methodology: The patient is a 53 year old, para 2. She had a vaginal hysterectomy for fibroid uterus 25 years previously. She had a known diagnosis of intra-abdominal leiomyomatosis that was managed by another physician previously. Ultrasound now showed a complex 2.7 x 3.8 centimeter mass in the adnexa. The patient had diagnostic laparoscopy, followed by robotic bilateral salpingo-oophorectomy, gastrocolic and greater omentectomy for debulking of the leiomyomas. A colpotomy was performed to extract the specimens. Total operative time was 67 minutes, blood loss was less than 50 cc, and the patient went home post-operative day 1. Final pathology was consistent with benign leiomyomas. The patient was debulked to zero residual disease.

Conclusion: Management of Leiomyomatosis Peritonais Disseminata may be achieved robotically as demonstrated in our video where a gastrocolic and greater omentectomy achieved optimal debulking status.

A Comparison Between Total Laparoscopic Hysterectomy and Vaginal Hysterectomy at the TECSalud Healthcare System

Homero Flores-Mendoza, MD1; Carlos Alberto Hernandez-Nieto2; David Basurto-Diaz2; Lisset Nungaray-Gonzalez2; Karina Leyva-Gutierrez2; Luis Fernando Garcia-Rodriguez3, 4

1Tecnologico de Monterrey; 2Programa Multicéntrico de Residencias Médicas, Tecnológico de Monterrey; 3Instituto de la Mujer, Tecnológico de Monterrey; 4Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado de Nuevo León

Objective: To compare variables regarding laparoscopic and vaginal hysterectomies.

Methods, Procedures: A retrospective analysis of 394 patients who underwent hysterectomy between 2007 and 2015 in the TECSalud healthcare system was performed; 165 patients in the vaginal group and 229 in the laparoscopic group. Means, standard deviation and confidence intervals were calculated and a Student’s t-test was performed to test differences between means.

Results: Population characteristics were as follows for the laparoscopic group: age 44 years (SD=0.52), BMI 27 (SD=0.41), uterine weight 169.27 grams (SD=7.07). Population characteristics for the vaginal group were: age 53.1 years (SD=0.91), BMI 25.98 (SD=0.41), uterine weight 105.47 grams (SD=4.12). A statistically significant difference between mean age, BMI, and uterine weight of both groups was found. Laparoscopic hysterectomies had a significantly lower hospital-stay (3.285 vs. 2.616; p=<0.001), nonetheless presented with a significantly higher surgical time (97.436 vs. 146.301; p=<0.001), no evidence in the data suggested difference in bleeding (210 vs. 191; p=0.14).

Conclusion: Evidence suggests that patients undergoing laparoscopic hysterectomy presented with a lower hospital-stay in comparison with patients who underwent vaginal hysterectomy and a tendency, albeit not significant, for less bleeding. Patients who underwent vaginal hysterectomy had significantly shorter surgical times and belonged to a different subset of the population. Although vaginal hysterectomy has been coined a
quick procedure, it is interesting to note that uterine weight was significantly higher in patients who underwent laparoscopic hysterectomy, somehow contributing to the higher surgical times observed. Therefore, total laparoscopic hysterectomy presents itself as a feasible, and safe procedure comparable to vaginal hysterectomy.

138GYN

A Comparison Between Total Laparoscopic Hysterectomy and Abdominal Hysterectomy at TEC of Monterrey Healthcare System

David Basurto MD1; Silva-Alanís J, MD2; Flores-Mendoza H, MD2; Hernández-Nieto CA2; Nungaray-Gonzalez L2; Leyva-Gutiérrez K2; García-Rodríguez LF3; De Alba-Márquez I, MD4

1Tecnológico de Monterrey; 2Programa Multicéntrico de Residencias Médicas, Tecnológico de Monterrey; 3Instituto de la Mujer, TECSalud del Sistema Tecnológico de Monterrey/Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado de Nuevo León; 4Escuela de Medicina del Tecnológico de Monterrey

Objective: To compare variables regarding laparoscopic and abdominal hysterectomies. Methods and Procedures: A retrospective analysis of patients who underwent hysterectomy between 2007 and 2014 at TECSalud healthcare system was performed; 741 patients in the abdominal group and 206 in the laparoscopic group. Means, standard deviation and confidence intervals were calculated and a Student’s t-test was performed to test differences between means.

Results: Population characteristics were as follows for the laparoscopic group: age 45.84 years (SD=6.94), BMI 25.68(SD=5.39). Population characteristics for the abdominal group were: age 47.44 years (SD=7.57), BMI 24.60(SD=3.20), wound infections 113 (SD=15.25; p=0.1144). There were no significant differences between characteristics of both groups. Laparoscopic hysterectomies had a significantly lower hospital-stay (2.62 vs 3.45; p=0.0001), significantly less bleeding (200.44 vs 291.98; p=0.0001). Nonetheless, they presented with a significantly higher surgical time (145.39 vs 123.52; p=0.0001). There were no differences in terms of complications between both groups and finally there was an increased risk of wound infection in the abdominal group (RR=1.42, p=0.1144)

Conclusion: Evidence suggests that patients undergoing laparoscopic hysterectomy presented with lower hospital-stay and less bleeding in comparison with patients who underwent abdominal hysterectomy. Patients who underwent abdominal hysterectomy had a significantly lower surgical time but an increased risk of wound infections. Complications were equivalent in both groups. Therefore, total laparoscopic hysterectomy is a feasible and a safe option for hysterectomy in our population

139GS

Subtotal Laparoscopic Cholecystectomy for Complicated Cholelithiasis

Francesco Fleres, MD1; Carmelo Mazzeo, MD2; Vincenzo Pruiti, MD2; Massimo Trovato, MD2; Eugenio Cucinotta, Prof MD2; 1University of Messina/Department of Human Pathology AOU G. Martino Policlinico Messina; 2AOU G. Martino Policlinico Messina/ University of Messina/ Department of Human Pathology
Introduction: Laparoscopic cholecystectomy has become the gold standard for managing of cholelithiasis. However patients with complicated cholecystectomy and difficult dissection around Calot’s triangle are still converted to open procedure. Subtotal cholecystectomy is a safe option in case of severe inflammation at Calot’s triangle because it may reduce the potential injury for common duct. We report our experience using laparoscopic subtotal cholecystectomy (LSC) to avoid bile duct injury and conversion in difficult cholecystectomy.

Methods and procedures: A retrospective review was performed on 16 laparoscopic subtotal cholecystectomy from January 2006 to December 2014. Length of post-surgical hospitalization, morbidity, mortality and follow-up were assessed.

Results: LSC was performed in 16 patients for severe fibrosis in 13 cases and cirrhosis in 3 cases. The median age of the patients was 69 years (range, 43-82 years). The median postoperative in patients stay was 6 days (range, 3-16 days). The median operative time for LSC was 95 minutes (range, 50-185 minutes). During the postoperative period no patient presented a biliary leak. A lithiasis of cystic remains in two patients. One patient underwent post-operative ERCP for a retained common bile duct stone. No postoperative mortality occurred. The cystic duct or Hartmann’s pouch stump was closed using endo-loop application in 10 (62%), intracorporeal suturing of stump of Hartmann’s pouch in 4 (25%) with endo-gia in 2 (13%).

Conclusion: The results suggest that LSC is a favourable surgical alternative to total cholecystectomy in cases with technically difficult severe cholecystitis. LSC is advantageous over open surgery, but it remains a non-routine choice.

140GYN

The Association Between Surgical Routes for Hysterectomy and Perioperative Outcomes Among Morbidly Obese Patients with Uterine Cancer

Emad Mikhail, MD; Jason L. Salemi; Entidhar Al Sawah; Anthony N. Imudia; Mitchel Hoffman University of South Florida

Objective: To estimate the association between routes chosen for hysterectomy and perioperative outcomes, among morbidly obese patients diagnosed with uterine cancer.

Material and Methods: A retrospective review of the nationally benchmarked, peer-controlled American College of Surgeons-National Surgical Quality Improvement (ACS-NSQIP) database during 2005-2013 was conducted. Patients were identified using appropriate ICD-9 and CPT codes. Patients were sub grouped according to body mass index (BMI, calculated as weight kg/m2); morbid obesity (class III) was defined as BMI≥40. The surgical route was classified into four groups; total abdominal hysterectomy (TAH), total vaginal hysterectomy (TVH), laparoscopic assisted vaginal hysterectomy (LAVH), and total laparoscopic hysterectomy (TLH). Due to absence of appropriate codes throughout the study period, robotic-assisted cases could not be analyzed separately from conventional laparoscopic hysterectomy.

Results: A total of 2,002 morbidly obese patients were included in the study; their distribution by hysterectomy route was: TAH 672 (33.6%), TVH 57 (2.8%), LAVH 248 (12.4), and TLH 1,025 (51.2%). The median operative time was significantly higher in the TLH group (171 min) compared to the TAH group (150 min) (p<0.05). However, the rate of perioperative outcomes was significantly lower in the TLH group including: length of hospital stay, blood transfusion, surgical site infection, and hospital readmission (p<0.05).
Conclusion: For morbidly obese patients diagnosed with uterine cancer, TLH is the most commonly utilized surgical route. Despite increased operative time compared to TAH, TLH offers improved perioperative outcomes in morbidly obese patients.

142GS

Small Bowel Obstruction Secondary to Phytobezoar

José P Fuentes Flores MD1; José Humberto Velazco de la Garza, MD2; Eduardo González, MD2; Dolores Edith López Garnica1

1Programa Multicéntrico ITESM Campus Monterrey/SSA; 2ITESM Campus Monterrey

The objective of this video is to demonstrate that minimally invasive surgery continues to be the trend in all the surgical specialties and that even when we are facing difficult cases we can achieve good results while using this approach.

Methods & Procedures: We present in this case a 36 year old male who arrived to the ER with the chief complaint of abdominal pain and distention. He was later diagnosed with small bowel obstruction after interrogation, physical examination and laboratory and imaging tests. Nevertheless, it was of unknown origin. A diagnostic laparoscopy was scheduled.

Results: The diagnostic laparoscopy initiated with Hasson technique because of the abdominal distention. We had an excellent surgical exposure and we had no problem with the bowel loops mobilization. However, the transition point identified did not have an obvious mechanical cause of obstruction and seemed like was filled with solid content instead of liquid content, something that is strange at this level. We decided to extend the umbilical incision to palpate the bowel loops. The solid content was confirmed and an enterotomy was made to have a diagnosis. Abundant content was extracted, with fiber-like consistence, what made us suspect about a phytobezoar. The enterotomy was closed and the bowel content was sent to pathology examination. The patient was discharged 6 days later.

Conclusion: Adequate approach to the obstructed patient is vital for having a fast diagnosis and successful treatment, with no complications. Laparoscopy, again, has to have its opportunity to cure. The lesser the hit the faster the recovery.

144GS

Low Pressure Assisted Suspended Gasless Laparoscopy Surgery in Elderly Patients with Cholecystectomy

RunSheng Guo, MD; YueYu Chen, MD The Second Military Medical University Abstract

Objective: To investigate the application of low pressure assisted suspended gasless laparoscopic cholecystectomy in elderly patients with cholecystectomy.
Methods: 150 cases of elderly patients in our hospital from 2013 to 2015 were randomly divided into assisted suspended gasless laparoscopic group: 12~10 mmHg group, 9~7 mmHg group, 6~4 mmHg group with 30 cases in each, suspended gasless laparoscopic group: 30 cases, traditional laparoscopic group 15~13 mmHg: 30 cases. Parameters were compared in each group.

Results: There were no significant difference in groups of intraoperative blood loss, analgesic use, exhaust and eating time and D-lactate and DAO levels in circulation, C-reactive protein, hospitalization time and postoperative complications etc. Suspended laparoscopy surgery group had the longest operation time. There were significant differences in operation time between suspended laparoscopy surgery group and combined group (P<0.05). There were significant differences in central venous pressure, expiratory CO2 partial pressure and pH value between combined group and suspended laparoscopy surgery group and laparoscopic group (P<0.05). There were no significant difference in 2H, 4h, 6h, 12h and 24h of the arterial systolic pressure, diastolic pressure, central venous pressure, the end expiratory pressure of CO2 and P value in the combined groups. Central venous pressure, the end expiratory pressure of CO2 and P value in the 9~7 mmHg group and 6~4 mmHg group were significant difference with the group 12~10 mmHg (P<0.05). And, the operation time in 9~7 mmHg group was significantly shorter than 6~4 mmHg group (P<0.05).

Conclusion: Low pressure assisted suspended gasless laparoscopy surgery in elderly cholecystectomy under pressure 9~7 mmHg is safe and reliable.

147URO

Robot-Assisted Management of Pediatric Ureteral Duplication Anomalies

Hubert S. Swana, MD; Eileen R. Grigson, MS; Mark A. Rich, MD

University of South Florida School of Medicine

Objective: Ureteral duplication is the most common renal anomaly. The upper pole ureter can occasionally obstruct and patients can present with pain and/or infection. We describe the techniques of robotic heminephrectomy and robotic ureteroureterostomy in children.

Methods: Two children presented with symptomatic ureteral duplication. Lateral decubitus positioning was used. An umbilical camera port was inserted. Two robotic trocars were placed along with an assistant port. During heminephrectomy, careful exposure of the renal hilum and proximal ureters was performed. The upper pole ureter was transected and passed under the lower pole vessels as a retraction handle. The blood vessels supplying the upper pole were dissected, clipped and cut, allowing heminephrectomy to take place with minimal blood loss. During ureteroureterostomy, cystoscopy and lower pole stent placement was performed. Both ureters were exposed proximally and the upper pole ureter was transected. The distal upper pole ureter was excised. An equivalently-sized ureterotomy was made in the lower pole ureter and interrupted 5-0 polygalactin sutures were used to create an end-to-side anastomosis.

Results: Operative times for the heminephrectomy and ureteroureterostomy were 225 and 140 minutes respectively. They were discharged on post-operative day 2 and 3 respectively. Intraoperative blood loss in both cases was minimal. No intraoperative or postoperative complications occurred. The patients remain symptom-free at least three years post-operatively.
Conclusion: Robotic technology is useful in the management of pediatric ureteral duplication anomalies. Careful consideration of the patient’s anatomy and the functional status of both renal moieties is necessary when selecting the proper surgery.

148URO

Novel Use of an Infant Cystoscope for Pediatric Ureteroscopy

Hubert S. Swana, MD; Arvind R. Krishnan, BA; Mark A. Rich, MD University of Central Florida School of Medicine

Objectives: The incidence of pediatric stone disease is increasing. Ureteroscopy in children is challenging due to the smaller caliber of the ureter. We present a video demonstrating the novel use of a 4.5/6-Fr, 0° newborn blunt needle tip cystoscope for cystoureteroscopy and laser lithotripsy in children with symptomatic distal ureteral stones.

Methods: In both cases young boys presented with abdominal pain, nausea and vomiting. They were found to have distal ureteral stones. In each case, a 4.5-6.5-Fr infant cystoscope was used to perform cystoscopy and retrograde ureteropyelography. This was followed by placement of a 0.025 PTFE safety guide wire. Using the same cystoscope, ureteroscopy was then performed. The cystoscope was passed alongside the wire through the ureterovesical junction to access and visualize the stones. A Holmium:YAG laser and 200 micron fiber were then used to fragment the stones. A 1.9-Fr nitonol stone retrieval basket was used to easily remove the stone fragments which were sent for crystallographic analysis.

Results: Both patients were rendered stone-free following the procedures. There was no need for balloon dilation of the ureterovesical junction. No intraoperative or postoperative complications were encountered.

Conclusions: The use of an infant cystoscope for ureteroscopy in children is a useful addition to a urologist’s endoscopic practice. The shorter length allows for easier manipulation of ureteral catheters, wires, laser fibers, baskets, and graspers. This technique can reduce the risk of ureteral injury by allowing passage through the ureterovesical junction without the need for dilation.

149GS

Risk Factors for Mortality After Anastomotic Leak and Organ Space Infections Following Colectomy; ACS-NSQIP Database Analysis

Reza Fazl Alizadeh, MD; Matthew D. Whealon, MD; Joseph C. Carmichael, MD; Steven D. Mills, MD; Alessio Pigazzi, MD, PhD; Michael J. Stamos, MD

Department of Surgery, University of California, Irvine Medical Center, Orange, CA

Objective: We sought to identify risk factors of mortality in patients with anastomotic leak (AL) and organ space surgical site infections (SSIs) following colectomy.
Methods & Procedures: The American College of Surgeons National Surgical Quality Improvement Program (NSQIP) database was used to examine the clinical data of patients who underwent open and laparoscopic colectomy procedures from 2012 to 2014. Multivariate regression analysis was performed to identify risk factors.

Results: We sampled 52202 patients who underwent open (22397, 42.9%) and laparoscopic (29805, 57.1%) colectomy. Of these, 2935 (5.6%) had AL and organ space SSIs (AL/SSI) (1770 open, 1165 laparoscopic). Patients with AL/SSI had significantly higher mortality (5.6% vs.1.7%, AOR: 2.98, P <0.001) and other serious morbidity (63.7% vs. 13.5%, P <0.0001). Ascites, ventilator dependency and emergent operation were the preoperative risk factors for mortality (P

Conclusion: Anastomotic leak with organ space SSI occurred in 5.6% of colectomy resections, and correlates with higher mortality and morbidity. Ascites, ventilator dependency, emergent operation are strong preoperative risk factors for mortality following AL/SSI. Utilization of a laparoscopic approach may decrease serious morbidity and rate of prolonged hospitalization.

150GS

Long-Term Therapeutic Effect of Subxiphoid Bilateral Video-Assisted Thoracoscopic Extended Thymectomy in the Treatment Myasthenia Gravis

Chung-Ping Hsu, MD; Ming-Ching Lee, MD Division of Thoracic Surgery, Taichung Velterans General Hospital, Taiwan

Background and Objective: We previously reported that subxiphoid bilateral video-assisted thoracoscopic (SxBiT) approach provided an excellent view during radical thymectomy and achieved promising surgical results in myasthenia gravis (MG) patients. The present study further evaluated therapeutic effect by post-operative neurologic response after long-term follow-up.

Methods and Procedures: A retrospective case series review was undertaken on all patients undergoing subxiphoid bilateral video-assisted thoracoscopic extended thymectomy (SxVATET) for myasthenia gravis with or without thymoma over a 14-year period. The therapeutic effect of neurologic response was categorized as complete remission (0-1 tab/day), satisfactory remission (2-3 tab/day) and unresponsive groups (4-8 tab/day) based on final pyridostigmine bromide daily dosage after surgery. To identify the predict factors correlated with complete remission was the end-point of study.

Results: This study consisted of 32 male and 73 female patients. Combined with thymoma was identified at 30 cases (29%). After long-term follow-up (median=6.5 years), the final neurologic response of complete remission, satisfactory remission and unresponsive groups were 47%, 39% and 14% respectively. The 5-year cumulative complete remission rate was 41.9%. Interestingly, there were 10 cases who suffered from MG exacerbation needed readmission for plasmaphoresis. Mild MG symptoms (MGFA class I and II) (p=0.024), MG with thymoma (p=0.014) and no MG exacerbation (p=0.042) were all of predict factors of complete remission.

Conclusions: SxVATET is safe and efficient in the treatment of myasthenia gravis and provide excellent therapeutic effect after long-term followed-up. Even combined with early stage thymoma, SxVATET is also one of treatment options.
Warmed, Humidified CO2 Insufflation Benefits Intraoperative Core Temperature During Laparoscopic Surgery: A Meta Analysis

Meara Dean, MBBS1; Craig Lynch, Assoc Prof, FRACS, MBChB, MMedSci2; Sandy Heriot, Assoc Prof, FRACS, MBBChir, MD, MBA2; John Mackay, Assoc Prof, MBBS, FRACS3

1Melbourne University/Epworth Hospital; 2Peter MacCallum; 3Epworth Hospital

Objective: Intraoperative hypothermia is associated with adverse post operative events. The use of warmed, humidified CO2 to establish pneumoperitoneum during laparoscopic has been associated with reduced incidence of intraoperative hypothermia, however the small number and variable quality of published studies has caused uncertainty about the true benefit of this therapy. A meta analysis was performed to further define a benefit for warmed, CO2 during laparoscopy.

Methods and Procedures: An electronic database search identified randomised controlled trials performed on adults undergoing laparoscopic abdominal surgery under general anesthesia with warmed, humidified CO2 versus cold, dry CO2. The main outcome of interest was change in intra operative core body temperature.

Results: 320 studies were identified as potentially relevant of which 13 met inclusion criteria and were included in the analysis. During laparoscopic surgery the use of warmed, humidified CO2 is associated with a significant increase in intraoperative core temperature (mean temperature change of 0.3) when compared to cold, dry CO2 insufflation.

Conclusion: Warmed, humidified CO2 insufflation during laparoscopic abdominal surgery has been demonstrated to improve maintenance of normothermia when compared with cold, dry CO2.

Gall Bladder Volvulus (GBV) with Segmental Right Liver Lobe Hypoplasia / Atrophy

Dr Syed Muhammad Ali. MBBS, MRCS Eng, FCPS(Surgery), FRCS Ed(GS), FEBC; Dr Shameel Mustafa. MD, CABS; Dr Zia Aftab. MBBS, FCPS(Surgery), FRCS Ed

Department of Surgery, Hamad Medical Corporation

Objective: To present a rare case of gall bladder volvulus with segmental right liver lobe hyperplasia. The patient underwent laparoscopic exploration and cholecystectomy and recovered smoothly. We present the edited video of this case.

Method: It is a single case study operated in Hamad General Hospital, Doha, Qatar. Gallbladder volvulus due to rotation of the gallbladder around its own mesentery, is a rare surgical emergency and often identified intraoperatively. Typically cholecystitis is the initial clinical diagnosis but a high index of suspicion on imaging can alert the physician for the possibility of GBV requiring urgent surgical intervention.
We describe a case of a young female patient with hypoplasia / atrophy of posterior segment of right liver lobe giving rise to a GB with no hepatic attachments but only mesenteric pedicle. She presented with first episode of sudden onset severe right subcostal pain. The ultrasonogram and magnetic resonance cholangiopancreatogram findings were suggestive of GBV. She underwent laparoscopic exploration that confirmed gall bladder volvulus. The GB was detorted and cholecystectomy was performed. She had an uneventful postoperative course and was discharged with no complications. Histopathologic examination showed intramural hematoma of GB with wall necrosis.

Result: Successful completion of laparoscopic procedure despite abnormally enlarged left liver lobe.

Conclusion: Gall bladder volvulus with right liver lobe hypoplasia is a rare anomaly that predisposes gall bladder to rotate on its mesentery resulting in gangrene. Prompt diagnosis and laparoscopic cholecystectomy cures the patient.

154URO

Laparoscopic Radioguided Surgery Resection of a Retroperitoneal Recurrence After Nephrectomy for Renal Cell Carcinoma

Dario Garcia-Rojo, MD; Jesus Muñoz, MD; Victor Parejo, MD; Jose L. Gonzalez-Sala, MD; Younes Fadil, MD; Juan C. Martin, MD; Eva Ballesteros, MD; Juan Prats, MD

Corporacio Parc Tauli. Hospital Sabadell. Universitat Autonoma Barcelona

Objective: The laparoscopic radioguided occult lesion localization technique can be useful in selected cases where suspect lesions may be difficult to identify intraoperatively, due to their dimensions or anatomical location. We present a laparoscopic radioguided surgery resection of a retroperitoneal recurrence after nephrectomy for renal cell carcinoma.

Methods and Procedures: A 48 year-old female patient with a history of left nephrectomy for renal cell carcinoma performed six months previously was visited in our department. CT of the abdomen on follow-up identified a 27 mm hypervascularized heterogeneous retroperitoneal nodule adhered to psoas muscle and lumbar wall. The patient was then submitted to excision of the retroperitoneal tumour using a gamma-probe to detect the lesion that had been preoperatively marked with albumin macroaggregate TC 99m using CT-guided Radioguided Surgery.

Results: The marked lesions were identified intraoperatively using a gamma-probe and were excised with safety margins. The radioactivity of the tissue was measured in vivo and after excision, as well as the radioactivity of the surgical bed, to confirm that the marked lesion had been fully excised. Surgery lasted for one hour and forty minutes, and discharge occurred after two days without complications. Histopathological analysis of the surgical specimens confirmed the recurrence of clear cell renal carcinoma.

Conclusion: Laparoscopic radioguided occult lesion localization technique allows a more conservative excisions and reduce the morbidity related to surgery.
Outcomes of Robotic Versus Open Myomectomy Performed by One Surgeon: A Total of 350 Patients

Laura Emily Eisman, MD1; Kristin Van Heertum, MD1; Erin Masaba MD3; Stephen Somkuti, MD, PhD2; Jennifer Nichols, DO2; Michael Sobel, DO2; Larry Barmat MD2

1Abington Jefferson Health; 2Abington Reproductive Medicine; 3Weill Cornell Medical College

Objective: Uterine fibroids have traditionally been removed via an open abdominal approach, but with the advent of robotic surgery, more cases can be treated by a minimally invasive approach. The purpose of this study is to compare clinical outcomes of robotic versus open myomectomy.

Methods & Procedures: This is a retrospective cohort study. Data was gathered from hospital records. All patients who underwent myomectomy by one surgeon at one institution were identified, 350 in total (222 robotic, 128 open). Operating room time, estimated blood loss, body mass index, fibroid number/weight, surgical complications, and length of stay were compared. SPSS was used for statistical analysis.

Results: Body mass index was similar between the groups (28.11±6.47kg/m2 in the robotic group, 27.45±6.20kg/m2 in the open group, p=0.347). Mean operating room time was significantly longer for robotic myomectomy (2.31±0.70 hours versus 1.80±0.64 hours, p<0.0005) despite mean fibroid number and weight being significantly lower (3.10±2.49 versus 5.91±5.10, p<0.0005; 141.45±102.71 grams versus 384.87±497.01 grams, p<0.0005). In the robotic group, mean estimated blood loss was significantly lower (39.75±85.50ml versus 210.99±277.10ml, p<0.0005), and mean length of stay was significantly shorter (0.16±0.38 days versus 2.35±0.93 days, p<0.0005). There were fewer complications in the robotic group (2.30% versus 16.44%, p<0.0005).

Conclusion: While there was an increase in operating room time when compared to open myomectomy, there was also significantly less blood loss, shorter length of stay, and fewer complications in the robotic group. Robotic myomectomy appears to be an excellent alternative to the traditional open myomectomy. Cost-benefit analysis is warranted.

Exclusion Technique While Performing Robotic Partial Cystectomy for Urothelium Carcinoma in a Bladder Diverticulum

Naveen Pokala, MD; Patrick Probst; Andrew L Franklin MDUndiversity of Missouri - Columbia

Objective: Urothelia carcinoma of the bladder can be amenable to multiple treatment modalities. For tumors located within a diverticulum a diverticulectomy can be performed. Currently, robotic-assisted laparoscopic diverticulectomy can be used in the appropriate patient and tumor location.

Methods & Procedures: The video reviews two robotic-assisted laparoscopic diverticulectomies performed for urothelia carcinoma. Our novel technique is to use the 60mmarticulating stapler for transection of the diverticulum. The neck of the diverticulum is dissected from the bladder and via the assistant port and the stapler is placed across and closed. Using cystoscopy, exclusion of the entire diverticulum is confirmed. The
stapler is then fired and the diverticulum is placed in an retrieval bag for later removal. The staple line is then excised. Finally, the cystotomy is closed in two layers using 2-0 barbed suture in a running fashion.

Results: Two patients underwent successful robotic-assisted laparoscopic diverticulectomies with our excision technique. The first case had a total operative time was 294 minutes with a blood loss of 30 mls and the final pathology was pT2a with positive margin. For the second case the total operative time was 484 minutes with a blood loss of 100 mls and the final pathology was pT2a.

Conclusion: Use of an articulating stapler for exclusion of urothelia carcinoma located with diverticulum is a promising technique in robotic-assisted laparoscopic diverticulectomy. It provides the benefits of minimal risk of tumor spillage, utilizing existing technology Urologists are familiar with, and is not technically challenging.

157GYN

Bilateral Parametrectomy with Nerve Sparing and Ureterolysis in the Treatment of Parametrial Endometriosis

Claudio Peixoto Crispi, Jr.,MD; Claudio Crispi, MD
Crispi Institute of Minimally Invasive Surgery

Bilateral parametrectomy with nerve sparing and ureterolysis in the treatment of parametrial endometriosis. We present a 30 years old patient, with intense dysmenorrhea and dyspareunia, diagnosed with deep endometriosis using physical examination and magnetic ressonance, involving the posterior compartment and both parametrium. To achieve the complete citoreductive surgery, a laparoscopy as perfomed, with the excision of all endometriotic visible foi, performing the nerve sparing, ureterolysis and vascular dissection, as shown in the video. No major complications were observed in the post-operative period. As a result the patient has improved all the pain visual analog scale, as also her life quality, almost immediately after the hospital discharge.

158GS

Hybrid Minilaparoscopic Technique for Right Colectomy

Diego Laurentino Lima, MD; Yukie Correia Konishi; Gustavo Alves Barros de Carvalho; Diego Laurentino Lima, MD; Flávio Carvalho Santos Filho; Vladimir Goldstein de Paula Lopes; Gustavo Lopes de Carvalho, MD, PhD
UPE

55 y/o asymptomatic female patient, while investigating anemia (Hgb: 8.0 g / dL), was diagnosed with ascending colon cancer on T3 stage. Surgery was performed using a hybrid technique of conventional laparoscopy (ultrasonic scissors), Single Port (for specimen removal) and Minilaparoscopy (2 and 3mm grippers). A right colectomy was performed with external anastomosis without the use of clamps or clips. Total surgery time was aproximatively 2 hours.
An excision in block was performed without direct tumor visualization. We used a 12mmHg pneumoperitoneum, which caused splenic contraction and enabled immediate auto transfusion, this way no blood transfusion needed. It was an advantage on the immune background since she was a cancer patient. We removed 30 lymphnodes at the specimen and none was compromised (N0). So no adjuvant therapy was necessary.

The patient was discharged on the 3rd postoperative day in good clinical status and better hemodynamically without any complications during the hospitalization.

159URO

Comparison of Robotic-Assisted and Open Ureteral Reimplant after Iatrogenic Ureteral Injury

Andrew L. Franklin, MD; Peter Jones; Naveen Pokala, MD University of Missouri - Columbia

Objectives: To analyze and compare outcome of robotic approach to open approach for the treatment of iatrogenic ureteral injuries.

Methods & Procedures: All patients that underwent repair of iatrogenic ureteral injuries between 2009 to 2015 were analyzed. The data was analyzed for demographics, intra and post-operative complication, length of stay and readmission rates.

Results: 24 patients underwent successful ureteral reimplantation for iatrogenic ureteral injuries, 9 underwent robotic and 15 underwent open repair; all injuries occurred during gynecological procedures. In the robotic reimplant group the average age was 44.6 with an average of 4.3 abdominal surgeries prior to the surgery causing ureteral injury. The average surgical repair time was 295.9 minutes (range 168-498) with an average blood loss of 77.2 mLs (range 20-150). Postoperatively, patients had an average hospital stay of 2.7 days. The complication and readmission rate was 11%. One patient underwent open reimplantation 3 years after original surgery for development of ureteral stricture. In the open reimplant group the average age was 40 with an average of 2.3 abdominal surgeries prior to the surgery causing ureteral injury. The average surgical repair time was 217 minutes (range 45-472) with an average blood loss of 133 mLs (range 10-350). Postoperatively, patients had an average hospital stay of 6.5 days. The complication and readmission rates were 25% and 31% respectively.

Conclusions: In our experience robotic-assisted ureteral reimplant after iatrogenic injuries offers the benefits of less blood loss, shorter hospital stays, few complications, and lower readmission rates.

160UR

Critical Analysis of Patients with Gross Hematuria, Intra- or Post-Operative Bleeding Following Robot-Assisted Laparoscopic Partial Nephrectomy for Renal Masses

Andrew L, Franklin, MD; Jack Campbell; Naveen Pokala

University of Missouri - Columbia
Objective: Partial nephrectomy is the current standard of care for T1a tumors and robot-assisted laparoscopic partial nephrectomy is increasingly being performed for complex renal tumors. However, significant hemorrhagic events can occur.

Methods & Procedures: 120 robot-assisted laparoscopic partial nephrectomies were performed on 117 patients from 2011-2015. Total operating time, blood loss, blood transfusions, gross hematuria, need for further procedures, Nephrometry score, final pathology and mortality were collected.

Results: Of the 120 robot-assisted laparoscopic partial nephrectomies, 119 were done for renal masses with 95 being malignant, and most commonly Renal Cell Carcinoma, Clear Cell pT1a (61.05%). Mean operative time was 247.8 minutes (SD 68.2), and mean blood loss was 294 mL (IQR 75-313). Hemorrhagic events occurred in 22 patients. Median blood loss in this group was 475 mLs (IRQ 200-1000). Five had hematuria alone and 17 received a transfusion. 4 patients required angioembolization. Two patients died, one from post-operative catastrophic bleeding and the other from septic shock. The most common Nephrometry score was 4a followed by 5a. Of those with hemorrhagic events the most common score was 4 and 8, with 60% being 7 or higher. In the patient who died from delayed bleeding had a score of 11a in the setting of bilateral renal masses.

Conclusions: Robot-assisted laparoscopic partial nephrectomy is a safe and nephron-sparing surgery for patients with appropriate renal masses. Significant hemorrhagic events can occur, and patients with larger masses and higher Nephrometry scores are at greater risk of a hemorrhagic events.

163GS

Partial Hybrid Minilaparoscopic Gastrectomy Due to Carcinoid Tumor Located Close to the Pylorus

Diego Laurentino Lima, MD; Gustavo Lopes de Carvalho, MD, PhD; Gustavo Barros Alves de Carvalho; Yukie Correia Konishi; Diego Laurentino Lima, MD; Flávio Carvalho Santos Filho; Vladmir Goldstein de Paula Lopes

UPE

Asymptomatic male patient who was diagnosed with carcinoid gastrointestinal stromal tumor (GIST) near the pylorus after performing a routine endoscopy exam. We used a 10mm laparoscope, 5mm trocar for a vessel sealing scalpeland needle holder, and two 3 mm ones for the introduction of the grippers for a hybrid procedure combining minilaparoscopy and conventional laparoscopy under endoscopy surveillance. It was necessary to dissect the greater gastric curvature to be able to manipulate the structures and a needle was used to indicate the tumor’s precise localization, thus to carry out full wall. The tumor was placed in a 200 mL bag to assure the most reliable extraction through the umbilical incision, enlarged for it. A transverse suture was made to prevent gastric stenosis with orientation points 3-0 PDS. No staples or clips were used. The total surgery time was 2 hours. Pathological examination confirmed free margins of the multifocal carcinoid tumor. Adjuvant therapy was not needed.

164MUL

Instrument Training for Minimally Invasive Gynecologic Laparoscopy: A Pilot-Scale Randomized Control Trial to Improve Instrument-specific Competence and Efficiency
Holly Huth, MD Candidate1; Alexander Heromin, MD Candidate1; Mohammad Islam, MD2; Ashley Hesson, PhD3; Mark G. Lewis, DO, MS2

1UMHS, Michigan State University/Sparrow Hospital; 2Obstetrics & Gynecology, Michigan State University/Sparrow Hospital; 3Michigan State University College of Human Medicine

Objectives: The tools of laparoscopy continue to evolve, challenging surgeons to acquire technical competence using a variety of new instruments. The objective of the pilot-scale randomized control trial reported here is to test the effectiveness of a short, mixed-method training intervention in improving knowledge and technique with a specific laparoscopic instrument.

Methods & Procedures: 42 medical trainees were randomized to standard training (ST, N=20) vs. enhanced training (ET, N=22). Both groups were shown instructional videos. The ST video (31s in length) demonstrated basic features of a recently developed laparoscopic instrument. The ET version (2:42s in length) included an advanced discussion of the instruments’ key features and incorporated safety information in the form of expert tips. Participants were then given a ten-question quiz and practice time with the instrument (1 min for ST, 5 mins with a live instrument and tissue sample for ET) followed by a standardized laparoscopic simulator assessment.

Results: Quiz scores were significantly higher for ET participants (mean = 6.3/10) as compared to ST participants (mean = 4.1/10; P<0.01). ET participants’ simulator task times were also significantly faster than ST times (ET mean=113.4s, ST mean=186.7s; P=0.02), independent of trainees’ previous experience with laparoscopy. A significant negative correlation was noted between quiz scores and task times (P=0.01).

Conclusion: This study demonstrates that a brief, structured training intervention improves both competence and efficiency on a laparoscopic instrument, suggesting that simulated interventions designed to optimize proficiency may decrease morbidity associated with new devices in the operating room.

165GS

A Trainee’s Paradigm to Perform Safe Laparoscopic Cholecystectomy in Morbidly Obese Patients

Yan Mei Goh, MBChB, MRCS; Ravindra Date, MD, FRCS, MS

Lancashire Teaching Hospitals NHS Trust

Objective: The advantages of performing laparoscopic cholecystectomy (LC) in morbidly obese (MO) patients are well-established. With rising obesity, it is imperative for surgical trainees to develop the proficiency to perform LC in this group in a safe and efficient manner. We have identified and standardized the following four aspects to enhance safety: safe induction of pneumoperitoneum; visualization of Calot’s triangle; enhance intra-operative view; and secure retrieval of gallbladder. Methods: We retrospectively reviewed all MO patients (body mass index [BMI] > 35kg/m2) who underwent LC at our centre performed by a single surgeon between 2012 and 2015. One or all of the following techniques were used in a standardized manner exclusively in MO patients. Smooth induction of pneumoperitoneum was achieved using Veress needle and optical trocarinsufflation. Pre-operative “liver shrinkage diet” and intra-operative traction of fundic grasper towards the chin, particularly with overhanging liver, coupled with duodenal retraction, enhanced visualization of Calot’s triangle. Adequate table-tilt and straps prevented patients sliding, augmenting intra-operative view. The gallbladder was extracted without spillage using a tough nylon bag.
Results: All 65 patients (58F,7M; average age: 48 yrs [range 22-78]) with BMI >35kg/m2 (average: 41.6 [range 35-56.5]) underwent successful completion of the procedure without the need for conversion or specific complications related to MO including bile duct injury, bile leak, spillage of biliary contents, or damage to adjacent viscera.

Conclusion: Instilling these simple and well-known techniques in a standardized manner will help surgical trainees perform LC in MO patients in a safe and effective manner.

166GS

**Novel Use of Continuous Vagus Stimulation in a Robotic Transaxiallry Thyroidectomy**

Fadi Murad, MD; Daniah Bu Ali, MD; Sang-Wook Kang, MD; Emad Kandil, MD

Tulane University

Introduction: This 44-year-old patient previously underwent a robotic-assisted right thyroid lobectomy and was found to have papillary carcinoma. She had another suspicious nodule (2.1cm) on the left side that continued to grow and the FNA biopsy showed follicular lesion of undetermined significance.

The video illustrates the steps of flap creation. Then illustrated the steps of placing the APS electrodes on the vagus nerve for continuous vagal stimulation to recognize early stretch. Initial stimulation of the Vagus nerve revealed evidence amplitude of 455uV and latency 4.6msec. After dissection of the carotid, the Vagus nerve was identified and circumferentially dissected. Then, An Autonomous Periodic Stimulation (APS) electrode was placed on it for continuous stimulation. A good signal was recorded (amplitude 450uV, latency of 4.6msec). Final stimulation of the Vagus showed Amplitude: 403uV, latency: 4.6msec final stimulation of the recurrent nerve showed amplitude: 361uV and latency: 1.2msec.

Results: The patient tolerated the procedure very well.

Conclusions: Continuous Vagus Stimulation use during robotic thyroid surgery is a safe and feasible approach.

167GS

**Laparoscopic Cystgastrostomy: Management of Pancreatic Pseudocyst**

Alice Lee, DO; Asha Bale, MD, FACS

Hackensack University Medical Center Palisades

Objective: Pancreatic pseudocysts are a known complication of acute or chronic pancreatitis. This is a case report of a patient who presented with a large pancreatic pseudocyst who was treated with a laparoscopic cystgastrostomy. Methods and
Procedures: Treatment options include endoscopic drainage, percutaneous drainage, or surgery. Laparoscopic cystgastrostomy is a successful tool in the management of pancreatic pseudocysts.

Results: Treatment of a symptomatic pancreatic pseudocyst can be had with low complication and morbidity rate via a laparoscopic cystgastrostomy.

Conclusion: There are many options in the management of enlarging or symptomatic pancreatic pseudocysts. This case report demonstrates that a laparoscopic cystgastrostomy can be done with minimal complications.

168GS

**Jejuno-jejunostomy Revision in a Patient with Intermittent J-J Intussusception**

William David Stembridge, DO1; Adeshola Fakulujo, MD2; Marc Neff, MD2
Rowan School of Osteopathic Medicine; 2Rowan SOM, Kennedy Memorial Hospital

Introduction: A 35-year-old patient with a history of laparoscopic Roux-en-Y gastric bypass, presented to the clinic complaining of upper abdominal distention and intermittent pain post-prandially. Upper GI and CT scans of the abdomen and pelvis showed appropriate anatomy and no pathological findings. Upper endoscopy was similarly negative. A suspicion was made for likely jejuno-jejunal intussusception as the area of anastomosis, while patent, appeared patulous on imaging. On repeated imaging for continued symptoms, finally a CT scan revealed intussusception at the JJ.

Methods: The patient was taken to the operating room on an elective basis for diagnostic laparoscopy, evaluation of the J-J anastomosis, and ultimately revision as an intussusception was demonstrable under direct visualization. The anastomosis was resected and revised by hand-sewn intracorporial anastomosis.

Results: Under direct laparoscopic evaluation, intussusception of the common jejunal limb into the area of the anastomosis was demonstrated. In close follow up, the patient has had resolution of the symptoms including absence of pain and no further distention with meals.

Conclusion: While difficult to identify conclusively on imaging and diagnose, jejuno-jejunal intussusception must be considered in patients with a history of Roux-en-Y gastric bypass who present with recurrent symptoms. We show that laparoscopy and laparoscopic revision are plausible options for diagnosis and treatment of this condition.

170GYN

**Age as a Positive Correlation Factor for Longer In-hospital Stay in Patients Undergoing Laparoscopic Hysterectomy**

Lisset Nungaray, MD1; Homero Flores-Mendoza, MD2; Carlos Hernandez-Nieto, MD2; David Basurto-Díaz, MD2; Luis Fernando García-Rodríguez, MD2

1ITESM-TECSalud; 2Programa Multicéntrico de Residencias Médicas, Tecnológico de Monterrey.
Objective: The main objective of this study is to determine if a correlation exists, if any, between in-hospital stay and the patients’ age.

Methods & Procedures: A retrospective analysis of 229 patients who underwent laparoscopic hysterectomy for benign gynecologic disease between 2007 and 2015 in two hospitals belonging to the TECSalud healthcare system in northeastern Mexico was performed. Continuous variables were expressed as means and standard deviations upon following a normal distribution by Anderson-Darling’s normality test. Means, confidence intervals, and standard deviations were calculated and Pearson’s correlation test was used to determine the correlation of variables in question, establishing a p-value at 0.05.

Results: Mean population variables were as follows: age of 44 years (SD 0.52; CI 44.11-45.83), in-hospital stay of 2.61 days (SD 0.06, CI 2.52-2.71), BMI of 27 (SD 0.41; CI 26.69-27.82), uterine weight of 169.27 grams (SD 7.07; CI 157.6-180.94) and transoperative bleeding of 191 ml (SD 13.76; CI 168.07-213.5). A statistically significant positive correlation between patient age and in-hospital stay was found (p=0.0055).

Conclusion: Analysis of data suggests evidence of a statistical significant positive correlation between patient age and in-hospital stay. Our results reflect shorter in-hospital stays when compared to other surgical approaches, such as abdominal or vaginal, but show that older patients are a subset of a population that may have longer in-hospital stay compared with younger patients; an important factor that must be taken into account during surgical planning and patient education.

172GS

Antral Herniation – Often Overlooked but Preventable Cause of Recurrence of Rolling Hiatus Hernia

Yan Li Goh, MBChB, MRCS, PG Dip Clin Edu; Verena Chu, MBChB; Vinutha D Shetty, MBBS, FRCS; Jeremy B Ward, MBChB, MD, FRCS(Ed); Ravindra S Date, MBBS, FRCS

Lancashire Teaching Hospitals NHS Foundation Trust

Objective: Recurrence rates of giant hiatus hernias (GHH) increase with hernia size and with previous revision surgery. The mechanisms for recurrences are not fully understood.

Methods & Procedures: This is a retrospective cohort study of all patients who underwent repair of GHH in a tertiary upper GI referral centre between November 2000 and November 2014. Data were collected on intraoperative findings and procedure performed at primary and redo surgery.

Results: 81 patients underwent GHH repair over the 14-year study period. 10 (12.3%) patients had symptomatic/radiological recurrence. Intra-operative findings at redo surgery demonstrated herniation of the distal stomach into the chest in 4 patients despite having an intact intra-abdominal wrap/gastropexy. An additional procedure: distal antral gastropexy (fixing the antrum to the anterior abdominal wall) was performed in 5 subsequent cases where the antrum was in the chest pre-operatively. These cases had no evidence at 12 month follow-up.

Conclusion: The mobility of the distal stomach back into the chest to cause recurrence should not be underestimated and is not addressed enough by conventional procedures. Distal antral gastropexy may be the solution in such cases to prevent recurrence.
**177GS**

**Robot Assisted Transaxillary Parathyroidectomy**

Fadi Murad, MD; Daniah Bu Ali, MD; Sang-Wook Kang, MD; Emad Kandil, MD

Tulane University, School of Medicine, Department of Surgery. New Orleans, Louisiana.

Introduction: A 65 years old female presented with symptomatic primary hyperparathyroidism. Neck ultrasound showed a left inferior parathyroid gland measuring 1.1x0.8x0.5 cm. the patient has also a localizing NM sestamibi scan that showed a left lower pole parathyroid adenoma. The patient was afraid from neck scar due history of keloids and elected to proceed with robot-assisted parathyroidectomy.

Procedure: The video illustrates the steps of flap creation and robotic technique to perform the operation. The gamma probe was used to confirm the location of the parathyroid gland at the inferior pole of the left thyroid lobe. After that the parathyroid gland was dissected circumferentially using vessel sealing device, and then extracted through the axillary incision. Using the nerve monitor probe the Vagus nerve was stimulated at the beginning and the end of the procedure. Intraoperative PTH levels dropped from 382 to 46 pg/ml.

Results: The patient was discharged same day of surgery and her postoperative course was uneventful and the patient remained eucalcemic on follow up visits.

Conclusion: Robot-assisted trans-axillary parathyroidectomy is a feasible and safe technique for localized hyperparathyroidism in patients who are motivated to avoid visible neck incision.

**179GS**

**Laparoscopic Enucleation of Pancreatic Insulinoma**

Kevin C.C, Choy, MBChB; Tay Kon Voi, MBBS; Krishnakumar Madhavan, MBBS National University Hospital, Singapore

Objective: We aim to describe the operative technique of the laparoscopic enucleation of a pancreatic body insulinoma.

Methods & Procedures: Case: A 64 year old man noted to have fasting glucose of 1.2mmol/L at routine health check-up. He was experiencing intermittent lethargy, altered mentation and blurred vision. Fasting insulin was elevated and a nodule was seen on CT pancreas that showed increased uptake on 68Ga-DOTA-NOC PET scan. The mass was removed via laparoscopic enucleation as described. Four ports were placed and the lesser sac entered after stomach hitched up to the anterior abdominal wall. After pancreatic plane was identified, an intraoperative ultrasound scan was performed to localize the 1.7cm pancreatic body mass. The inferior pancreatic plane was dissected and the mass was enucleated as a whole with minimal amounts of pancreatic tissue. After achieving hemostasis, hemostatic glue was applied at the resection area. A drain was placed behind the stomach.
Results: The patient was discharged well on post-operative day five. Blood glucose levels were within the normal range postoperatively without the need for hypoglycemic rescue or supplemental insulin.

Conclusion: We have demonstrated the successful laparoscopic enucleation of a pancreatic insulinoma 0.05). Even though the cyst size in CL group (7.82±3.53 cm) is significantly smaller than that in GL group (13.24±4.31 cm) (p<0.05), the operation duration in CL (30.2±19.9) is significantly longer than that in GL group (18.5±12.7) (p<0.05). There is no difference in blood loss, duration before gas pass, and hospitalization duration between CL and GL group.

Conclusions: GL is as safe and feasible as CL for ovarian cystectomy, but GL takes short operation time than CL.

181GYN

Robotic Myomectomy: A Tissue Extraction Technique with the Use of Gel Port

Khara Simpson, MD1; Michael C. Pitter MD1, 2

1Columbia University Medical Center; 2Lawrence Hospital

Objectives: To demonstrate the uses of a gel port at the time of robotic myomectomy specifically regarding needle exchange and tissue extraction. To review the ExCITE technique for tissue extraction.

Methods & Procedures: This video shows the surgeon's technique for placement of a gel port at the beginning of a robotic myomectomy to optimize operative flow.

Results: Use of the gel port may reduce operating time by minimizing time for needle exchange and tissue extraction. The gel port may also be used to house the assistant port which reduces the number of incisions.

Conclusion: Use of a gel port at the time of robotic myomectomy is feasible and is similar in cost to use of the power morcellator. Further research is needed to see if it significantly reduces operative time.

183GS

Low Friction Minilaparoscopic Instruments are More Efficient Than Regular Minilaparoscopic and Laparoscopic to Perform Delicate and Precise Tasks in a Training Box

Diego L. Lim,a MD; Wood A. Firme, MD; Gustavo L. Carvalho, MD, PhD; Phillip P. Shadduck, MD; Vladmir Goldstein de Paula Lopes; Flávio Carvalho Santos Filho; Gustavo Barros Alves de Carvalho; Yukie Correia Konishi

Universidade de Pernambuco

This study aims to compare the performance of conventional laparoscopic (CL) with two different kinds of minilaparoscopic surgical instruments, Low Friction (LF) and Regular Friction (RF), in a training box.
Method: A comparative study with medical students and surgical residents forming two distinct groups was done in the operating room of the University Hospital Oswaldo Cruz. Each group performed four standard tasks in a training box 1- to collect five bean seeds, 2- to pass the surgical thread through five small rings, 3- to make a four “pearl necklace” and 4- to do a simple 5.0 polygalactine suture knot using randomly CL, LF MINI and RF MINI instruments. Volunteers were trained at least two days prior to the experiment, and just considered apt to be tested after having acquired minimal expertise. Each activity was performed five times, and the average time in each activity was used to calculate the score. A Student T-test was used to compare the averages, using the significance level one $\alpha$ of 5%.

Results: Except for the task number 1, when CL performed better, in the three other tasks, MINI, and in special the LF MINI, showed significantly better time results when compared with CL ($P<0.0001$).

Conclusion: Under standard laboratory conditions, minilaparoscopy, and, in special, its low friction version, was more efficient than regular laparoscopy in performing precise and delicate tasks of laparoscopic training box.

184GS

Intragastric Balloon for Overweight Patients: A Safe and Effective Alternative

Diego L. Lima, MD; Flavio Augusto Martins Fernandes Jr MD, MSc; Gustavo L. Carvalho MD, PhD; Prashanth Rao, MD; Phillip P. Shaddock, MD, FACS; Gustavo Barros Alves de Carvalho; Yukie Correia Konishi; Isabelle D. Montandon

Universidade de Pernambuco

The intragastric balloon (IGB), a reversible device approved for treatment of obesity, is safe and effective in overweight adults is less well studied.

Objective: To prospectively analyze the safety and effectiveness of IGB in overweight adults and to compare the results to a simultaneous cohort of obese patients.

Methods: 139 patients were evaluated in a prospective study. 26 overweight and 113 obese patients underwent outpatient, endoscopic IGB placement under IV sedation. The IGB was filled with 550-900 ml (average 640ml) solution of saline, radiological contrast and methylene blue, with an approximate final proportion of 65:2:1. Patients were followed at 1-2 weeks and then monthly for 6 months. At 6 months, patients underwent IGB removal, using an esophageal overtube to optimize safety, and then 6 more months follow-up.

Results: IGB time was $190\pm36$ days in overweight and $192\pm43$ days in obese patients. Symptoms of IGB intolerance included nausea and pain, were transiently present in 50-95% of patients for several days, and necessitated early IGB removal in 6% of patients. There were no procedure-related complications and no IGB-related esophagitis, erosion, perforation, or obstruction. The % excess weight loss (EWL%) was $108\pm63$% in the overweight group and $41\pm26$% in the obese group ($p=0.001$).

Conclusion: In overweight adults failing standard treatments, IGB placement for 6 months had an acceptable safety profile and excellent weight loss.
Analysis of Perioperative and Survival Outcomes of Uterine Serous Papillary Cancer Staged by an Open or Laparoscopic Approach

Eli Serur, MD1; Nithya K. Gopal, MD2; Jeanette Voice, MD1; Amrit K. Sraow, BS3; Nisha Lakhi, MD1

1Richmond University Medical Center, Staten Island, New York; 2Brooklyn Hospital Center, Brooklyn, New York; 3Brooklyn Hospital Center, Brooklyn, New York

Objectives: Evaluation of perioperative and survival outcomes in patients with uterine serous papillary cancer (USPC) managed by either open or laparoscopic staging.

Methods: Eight year retrospective review

Results: OS was performed on 37 patients (67.7%) and LS on 22 (37.3%). Conversion rate was 0%. Pathological stage, median age, BMI, and prior abdominal surgery rate were similar between groups. There was no significant difference in operative time, however median estimated blood loss (310 ml vs. 175, p=0.048) and hospital stay (4 days vs. 1, p<0.042) were lower for LS. Intraoperative and post-operative adverse events were similar between groups. Neoadjuvant chemotherapy rates were similar for OS and LS, (13.5 % vs. 18.2 % p=0.45). Debulking to zero centimeter residual disease was achieved in 65.7 % OS vs. 90.5 % of LS (p=0.10). Post-operative adjuvant therapy was similar between OS and LS: brachytherapy (4.5% vs. 0.5% p=0.36), external been radiation (30.3% vs 33.3% p=0.63), adjuvant chemotherapy (71.9% vs. 86.4%, p=0.21). Differences in median follow-up for OS and LS were non-significant, (13 [range 1-78] months vs. 19 [range 1-36] p=0.898). Overall survival (OS) and progression free survival (PFS) were similar for all stages, (OS 89.2 % vs. 86.4% p=0.746, PFS 75.7% vs. 63.3%, P=0.323). The estimated 36 month progression free survival was almost identical in both arms at 55.3% vs. 53.3% (p=.727)

Conclusion: Similar debulking rates and OS and PFS demonstrate that LS for the management of USPC is feasible.
categorized in two groups- laparoscopic splenectomy (LS) and open splenectomy (OS). We compared outcomes of in-hospital mortality, postoperative length of stay (pLOS) and incidence of major complications (MC) between the two groups. We performed univariate parametric and non-parametric analysis as appropriate. We then matched patients on baseline demographic and injury characteristics using propensity score matching techniques and compared differences using regression where possible. Separate analyses were performed for patients with isolated abdominal injuries.

Results: A total of 8,386 patients underwent OS while 51 patients underwent LS. No significant difference was found in pLOS (6 days, \( p=0.15 \)) or incidence of MC (20% versus 18%, \( p=0.71 \)). However mortality was lower in the LS group (6% versus 16%, \( p=0.04 \)). For patients with isolated splenic injuries there were 21 patients in the LS group and 3,017 patients in the OS group. Patients in the LS group had a shorter pLOS (4 versus 5 days, \( p=0.024 \)). No mortality occurred in the LS group compared to 5% in the OS group (\( p=0.24 \)). After matching no outcome difference was found between the two groups.

Conclusions: Laparoscopic splenectomy for trauma is a safe procedure with possibly better outcomes when compared with open splenectomy. This is especially true for patients with isolated splenic injuries.

187GS

Robot-Assisted Transaxillary Right Thyroid Lobectomy

Daniah Bu Ali, MD; Fadi Murad, MD; Sang-Wook Kang, MD; Emad Kandil, MD

Tulane University School of Medicine, Department of Surgery

Objective: A 37 years old patient presented with right neck mass. Ultrasound showed a 3.9 cm right thyroid nodule with internal vascularity, and fine needle aspiration revealed hurthle cell neoplasm. The patient wanted to avoid neck scar due to history of keloid. Accordingly, we elected to proceed with robot-assisted transaxillary right thyroid lobectomy. The video illustrates the flap creation steps and robotic technique of the procedure.

Procedure: A 5cm incision was made in the right anterior axillary line and a subcutaneous flap was created. The vagus nerve was stimulated initially, and then the superior thyroid pedicle was dissected and divided using a vessel sealing device. The recurrent laryngeal nerve was identified after meticulous dissection and confirmed using the nerve stimulator. The inferior pedicel was then dissected and divided, and the thyroid lobe was shaved from the trachea using a vessel sealing device. At the end the right thyroid lobe and isthmus were separated from the left lobe and extracted through the axillary incision.

Results: The patient was discharged on the same day, and had an uneventful postoperative course.

Conclusion: Performing thyroid lobectomy via robot-assisted transaxillary approach is a safe and feasible technique for patients who prefer to avoid neck incision.

188GS

Robotics in Colorectal Surgery: A Single Unit Experience
Michael Jones, MD; Deena Harji, MBChB; Syeda Zehra Imam; Saher Anwar; Anil Reddy; Madhan Jha

James Cook University Hospital

Purpose The aim of this paper is to compare the clinical and oncological outcomes of robotic versus laparoscopic colorectal surgery in a single center.

Methods A prospective cohort study was conducted at our institution over a 12 month period between January and October 2015. Data was collected on all operative, clinical and oncological outcomes for all patients undergoing laparoscopic or robotic colorectal surgery. A propensity matched analysis was conducted, matching patients for ASA grade, disease pathology and operation undertaken. SPSS version 22 was used to analyse the data.

Results A total of 102 patients were identified, with 51 (50.0%) of patients undergoing robotic colorectal surgery. The commonest indication for resection was malignancy, with 39% of all resections undertaken for this reason. There were no statistically significant differences between the two with regards to operative parameters, including operating time. Tumour stage, nodal status and lymph node yield was similar in both groups. The R0 resection rate was higher in the robotic group compared to the laparoscopic group, 100% versus 90.5%, p=0.12. Median length of stay was similar in the two groups; 3.5 days robotic versus 3 days laparoscopic, p=0.78.

Conclusion Our initial experience demonstrates that clinical and oncological outcomes are preserved during the initial learning curve phase of robotic surgery, with these outcomes being equivocal when compared to the laparoscopic group.

189GYN

Robotic Assisted Laparoscopic Excision of a Rectovaginal Endometriotic Nodule

Obianuju Sandra Madueke-Laveaux, MD; Khara Simpson, MD; Arnold Advincula, MD

Columbia University

Objective: To illustrate a surgical technique for excision of a rectovaginal endometriotic nodule using robotic assisted laparoscopy.

Methods & Procedures: We present an individual case of rectovaginal endometriosis that was successfully surgically managed.

Results: The rectovaginal nodule was completely resected without injury to surrounding structures.

Conclusion: A step-wise approach to resection of rectovaginal nodules, with an emphasis on identification and isolation of relevant anatomy, is essential to complete resection.
Thoracoscopic Pericardial Window Creation in Neonate

Min Li Xu, MD; Alex L Kharazi, MD; Gustavo Stringel, MD

Westchester Medical Center Background A newborn male infant was born with congenital anomalies including macroglossia, skin folds, and overriding suture plates. The patient underwent a pericardiocentesis on the first day of life, and fluid analysis demonstrated a chylopericardium. Repeated pericardiocentesis and follow-up echocardiograms revealed a persistent, large pericardial effusion. As a result, a pericardial catheter was inserted, and an average of about 50 cc of chyle drained from it daily despite medical management.

The patient was taken to the operating room on his 27th day of life (weight, 3.9 kg), and a thoracoscopic thoracic duct ligation was performed followed by thoracoscopic creation of a pericardial window. The chest tube was removed on the 5th postoperative day. A repeat echocardiogram postoperatively demonstrated minimal residual pericardial effusion. The patient was subsequently discharged on the 10th postoperative day, and did well thereafter.

Discussion Pericardial effusions in neonates require surgical intervention when medical management fails. It is imperative to intervene in a timely fashion so as to prevent severe sequelae, such as protein wasting and malnutrition. The ensuing operation should be a thoracoscopic pericardial window creation despite the patient's size at the time of surgery. Even neonates can benefit from this minimally invasive approach.

Therefore, as illustrated by the present case, thoracoscopic pericardial window creation with or without thoracic duct ligation provides a safe and effective alternative to classical thoracotomy in the drainage of pericardial effusions in the pediatric population.

Laparoscopic Ladd’s Procedure for Intestinal Malrotation in Newborns and Children. Experience of a Regional Hospital in Mexico

Ana I. Vargas, MD1; Joel Cazares, MD2; Jorge Cantú-Reyes, MD2

1ITESM – SSNL; 2Hospital Regional de Alta Especialidad Materno Infantil, Servicios de Salud de Nuevo León, Monterrey, Mexico

Objective Case series describing our experience in laparoscopic Ladd’s procedure and outcomes in newborns and children.

Materials and Methods Retrospective study from August 2014 to January 2016, during this period five patients have had laparoscopic Ladd’s procedure for intestinal malrotation. Patient sex, age, initial diagnosis, associated findings, mean surgery time and hospital stay were included.

Results Intestinal malrotation occurs in 1 in 500 live births, most patients are asymptomatic. In our study we found a male to female ratio of 3:2, mean age of 2.9 years (range 12 days-10 years), mean weight of 11.9 kg (range 2.6-34 kg), two patients had initial diagnosis of intestinal malrotation, one patient with duodenal atresia and two patients with intestinal obstruction. All the patients had at least one episode of bowel
obstruction before surgery, three patients had internal hernia (60%). Four patients underwent laparoscopic appendectomy, one extracorporeal. There were no conversions to open procedure and no complications. All the patients started oral liquids on day four with good tolerance. The mean surgery time and hospital stay were 120 minutes and nine days respectively.

Conclusion Intestinal malrotation is a differential diagnosis that should be considered in all pediatric patients with bowel obstruction symptoms; laparoscopy is a good tool to reach a final diagnosis. Laparoscopic Ladd’s procedure is a feasible option for patients with intestinal malrotation with or without internal hernia. It can be performed in newborns and children successfully with short hospital stay.

192GS

Small Bowel Obstruction Due to Gastric Band Tubing: A Rarely Reported Complication

Eric D Rideman, DO1; Christina Li, MD1; Mehraz Malakooti-Nezad, MS IV2; Rovin Saxena, MS IV2

1Northwest Hospital; 2International American University College of Medicine

Introduction Laparoscopic adjustable gastric banding (LAGB) is a primary bariatric intervention in treating morbid obesity. LAGB is an effective means of surgical weight loss though the number of gastric bands being placed has decreased1. We report a rare complication of small bowel obstruction (SBO) due to gastric band tubing in a patient with a prior LAGB procedure.

Case Presentation A 38 year old female presented with nausea, vomiting and abdominal pain, four years after LAGB. A CT scan showed a small bowel obstruction (SBO) caused by the connecting band tube, as it had looped around the small bowel. A Diagnostic Laparoscopy was performed and the small bowel was freed from the band tubing. The LAGB was reconnected to the tubing and left in place to be used for further weight loss.

Conclusion SBO caused by LAGB tubing is rare. This must be considered whenever a patient who is status post-LAGB presents with symptoms of an obstruction. Therefore, in a post-operative bariatric patient, a high degree of clinical suspicion along with surgical intervention should be utilized to aid in the diagnosis of a SBO. As surgeons we must be well versed in all potential causes of SBO in post Bariatric surgery patients and address them accordingly with a low threshold for surgical intervention.

193GS

Conventional Laparoscopic vs. Laparo-Endoscopic Single Site Heller Myotomy: Is LESS More?

Alexander .S Rosemurgy, MD; Darrell Downs, ATC; Janelle Spence, BS; Christian Rodriguez, BS; Whalen Clark, MD; Indraneil Mukherjee, MD; Sharona Ross, MD

Florida Hospital Tampa

Introduction: Heller myotomy is first-line treatment for achalasia. This study was undertaken to compare a single institution’s experience with conventional laparoscopic vs. LESS Heller myotomy.
Methods: With IRB approval, 590 patients were prospectively followed after Heller myotomy; we compared outcomes after laparoscopic vs. LESS myotomy. Patients scored the frequency and severity of their symptoms before and after myotomy using a Likert scale (0=never/not bothersome to 10=always/very bothersome). Patients were queried before myotomy about their greatest postoperative priorities and after myotomy about their scar satisfaction (1=revolting to 10=beautiful). Data are presented median (mean ±SD).

Results: 432 patients underwent laparoscopic myotomy and 158 patients underwent LESS myotomy. Before LESS myotomy, patients scored safety as their greatest priority, with pain control and scar appearance/size following in order thereafter. Conventional laparoscopic and LESS patients experienced similar reductions in dysphagia frequency (10 (9 ± 2.1) to 4 (4 ± 3.2) vs. 10 (8 ± 2.3) to 2(4 ± 3.2), p

Conclusions: Durable symptom resolution and patient satisfaction support continued application of Heller myotomy. Before myotomy, safety was the primary patient concern. The LESS approach provides the same safe salutary benefits with the additional benefits of shorter hospitalization and improved cosmesis through outstanding scar satisfaction. Ultimately, there is “more gain” associated with LESS Heller myotomy and its application is encouraged.

194GS

A Single Institution’s First 100 Patients Undergoing Laparoscopic Heller Myotomy: Do Long-Term Outcomes Justify Continued Application?

Janelle S. Spence, BS; Darrell Downs, ATC; Christian Rodriguez, BS; Indraneil Mukherjee, MD; Whalen Clark, MD; Sharona Ross, MD; Alexander Rosemurgy, MD

Florida Hospital Tampa

Introduction: This study was undertaken to report outcomes following laparoscopic Heller myotomies undertaken more than 15 years ago to determine if outcomes are salutary, durable, and support continued application of laparoscopic Heller myotomy as a first-line therapy for achalasia.

Methods: With IRB approval, 100 consecutive patients have been prospectively followed after Heller myotomy undertaken 1991-2000. Patients scored the frequency/severity of symptoms using a Likert scale (0=never/not bothersome to 10=always/very bothersome). Pre- and post-operative outcomes with Heller myotomy are compared. Data presented as median (mean ± SD).

Results: For all 100 patients, follow-up is 10 years (10 ± 5.3). After myotomy, dysphagia frequency improved from 10 (9 ± 2.1) to 4 (4 ± 2.8) and dysphagia severity improved from 10 (9 ± 2.4) to 2 (3 ± 2.9) (p

Conclusions: Follow-up after laparoscopic Heller myotomy conveys durable symptomatic relief after nearly two decades. Durable salutary benefits after laparoscopic Heller myotomy justify its continued application as first-line therapy for achalasia.

195MUL

Beauty In The Eye Of The Beholder: The Value Patients Assign To “Scarless” Laparoscopic Surgery
Timothy S. Bourdeau, BS; Christian Rodriguez, BS; Darrell Downs, ATC; Sharona Ross, MD; Heather DeReus; Indraneil Mukherjee, MD; Alexander Rosemurgy, MD Florida Hospital Tampa

Introduction: We believe patients’ value of better cosmetic outcomes is one of the driving forces behind Laparo-Endoscopic Single Site (LESS) surgery. This study was undertaken to determine the value patients assign to “scarless” surgery.

Methods: From 2008-2015, 604 patients were queried preoperatively to self-assess their body image and prioritize concerns they had about their impending operation. Patients used a Likert scale (1=definitely disagree, to 5=definitely agree) to weigh their opinions. Patients were stratified based on age, sex, and BMI.

Results: Patients’ reported neutral views regarding their body images after responding to prompts such as “I like my looks just the way they are” and “I like dislike my physique”. A majority of patients would forgo any cosmetic benefit of LESS surgery if it increased risk, pain, operative duration, recovery, or cost. In prioritizing outcomes achieved with LESS surgery, patients rated (most to least important): less pain, quicker return to full activity, less pain medication required, and improved cosmetic outcome, independent of BMI and sex. However, the youngest third of the population (≤48 years) were more willing to undertake a longer operation (up to 50% longer) if it resulted in no apparent scar (p<0.001).

Conclusion: Patients were neutral on their body image prior to LESS surgery. In contrast to our original supposition, patients valued other considerations more than cosmetic outcome. Cosmesis was more important to younger patients. Since conventional laparoscopy is well tolerated and meeting patients’ needs, is conventional laparoscopy an impediment to the progression of minimally invasive surgery?

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LESS Surgery Avoids Body Image Disturbance and Improves Patient Satisfaction with Appearance of their Abdomen

Sharon S. Ross MD; Timothy Bourdeau; Christian Rodriguez, BS; Darrell Downs, ATC; Indraneil Mukherjee, MD; Whalen Clark, MD; Alexander Rosemurgy, MD

Florida Hospital Tampa

Introduction: A major appeal of Laparo-Endoscopic Single Site (LESS) surgery is the belief that it avoids body image distortion. With the belief that patients would have great appreciation for the LESS approach, this study was undertaken. We set out to determine patient perceived changes in body image early after undergoing LESS surgery.

Methods: From 2009 to 2015, patients undergoing LESS surgery completed surveys about their body image during preoperative and first follow-up office visits. A Likert scale (1=definitely disagree, to 5=definitely agree) was used to self-assess patient opinions. Satisfaction and overall and abdominal appearance were self-assessed utilizing a continuous line (0% very dissatisfied to 100% very satisfied). Data presented as median (mean ± standard deviation) where appropriate.

Results: 167 patients (age 54 years, 61% women) were queried with follow-up at 1 (4±5.7 months). There were no differences before vs. after LESS surgery for questions which self-assessed body image, including: “my
body is sexually appealing” and “I like the way my clothes fit me”. Patients self-reported no difference in satisfaction regarding their overall appearance but were more satisfied with the appearance of their abdomen after LESS surgery (59% preoperatively vs. 82% postoperatively; p=.04).

Conclusion: Before LESS surgery, patients have a healthy perception of their appearance and body image. Body image disturbance does not occur with LESS surgery; rather, there is an improvement in self-assessed satisfaction with the appearance of their abdomen. LESS surgery avoids body image disturbance and adds a holistic feature to minimally invasive surgery?

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197GS

**Blood Transfusions Predict Negative Outcomes after Pancreatectoduodenectomy**

Alexander Rosemurgy, MD; Christian Rodriguez, BS; Whalen Clark, MD; Darrell Downs, ATC; Janelle Spence, BS; Jennifer Kilbourn, BS; Sharona Ross, MD

**Florida Hospital Tampa**

Introduction: Although minimally invasive surgery continues to play an ever increasing role in the surgical management of pancreatic diseases, there remain fundamental questions to be addressed. This study investigates the impact of blood loss and red blood cell (RBC) transfusions on outcome as pancreatectoduodenectomy progresses toward minimally invasive surgery

**Methods:** From January 2014 to November 2015, 136 consecutive patients undergoing pancreatectoduodenectomy, were prospectively followed with IRB approval. Patients were followed for at least one month postoperatively.

**Results:** 30% of patients received blood transfusion(s) during their perioperative period; these patients had lower preoperative hemoglobin (10.5g/dl v 12.8g/dl) and lost 200ml more blood intraoperatively than patients who underwent pancreatectoduodenectomy without transfusion (both <0.001). Patients who received transfusions also had a longer LOS (11 days vs 6 days, p<0.001), and were more likely to be discharged to a skilled nursing facility (p=0.012). Readmission rates were 32% for those receiving and 19% for those not receiving RBC transfusions. 33% of patients underwent robotic pancreatectoduodenectomy and 67% underwent ‘open’ pancreatectoduodenectomy. 24% of patients undergoing robotic pancreatectoduodenectomy received RBC transfusions vs. 31% of patients undergoing ‘open’ pancreatectoduodenectomy. Patients who underwent robotic pancreatectoduodenectomy were more likely to get discharged home under self-care and less likely to expire before discharge (p<0.016).

**Conclusions:** Low preoperative hemoglobin, higher intraoperative blood loss, and ‘open’ pancreatectoduodenectomy predict transfusion of blood. Robotic pancreatectoduodenectomy leads to fewer transfusions, shorter LOS, fewer rehospitalizations, and more frequent discharges to home. RBC transfusions are a surrogate marker for morbidity with pancreatectoduodenectomy; robotic pancreatectoduodenectomy may be the superior approach.
Over 250 Distal Pancreatectomies: Our Experience and Journey to the Minimally Invasive Approach

Sharona S. Ross, MD; Darrell Downs, ATC; Christian Rodriguez, BS; Janelle Spence, MD; Whalen Clark, MD; Indraneil Mukherjee, MD; Alexander Rosemurgy, MD
Florida Hospital Tampa

Objective This study delineates our experience and journey incorporating minimally invasive surgery into our armamentarium for distal pancreatectomy and splenectomy. Methods With IRB approval, 261 patients, from 1998-2015, underwent open, laparoscopic, Laparo-Endoscopic Single Site (LESS), or robotic distal pancreatectomy/splenectomy and were prospectively followed. Margin status and AJCC staging were determined. Median data are reported.

Results Distal pancreatectomy/splenectomy was undertaken via an ‘open’ approach in 132 patients, via conventional laparoscopy in 57, via LESS in 35, and robotically in 37. 178 patients had neoplastic disease with R0 resections achieved in 84% of patients and no difference among groups. Most patients had AJCC stage IB cancers (45%, p<0.002).The LESS approach yielded the least blood loss and resulted in the shortest total operation time (200 mL, p

Conclusion Distal pancreatectomy/splenectomy can be undertaken efficaciously through several different approaches. Our experience denotes less blood loss, shorter operative time, and shorter LOS with minimally invasive approaches; minimally invasive approaches for distal pancreatectomy/splenectomy are superior when possible, particularly the robotic approach, and implementation into each surgeon’s armamentarium is warranted.

2nd Trimester Laparo-Endoscopic Single Site Cholecystectomy

Indraneil Mukherjee, MD; Darrell Downs, ATC; Christian Rodriguez, BS; Whalen Clark, MD; Sharona Ross, MD; Alexander Rosemurgy, MD
Florida Hospital Tampa

This video demonstrates our standardized technique for Laparo-Endoscopic Single Site Cholecystectomy. A single multi-trocar port was placed through a 1.2 cm vertical incision at the umbilicus, through which a 5 mm deflectable tip laparoscope, a locking grasper and a curved bariatric locking grasper were inserted. The straight bariatric grasper was introduced, utilized to grasp the fundus and retract the gallbladder in cephalad direction. The bent locking grasper was used to grasp the infundibulum and retract it laterally. A Maryland dissector and a hook cautery were used to develop a window between the infundibulum and the liver bed to clearly identify the cystic duct and artery. Attention was given to identify critical view of safety to minimize the possibility of any inadvertent bile duct injury.

Once it was achieved, the cystic duct and artery were clipped and divided. Next the gallbladder was then dissected off the liver bed with electro-cautery. After confirming that the liver bed was dry, the gallbladder was detached completely from the liver. It was placed in a specimen retrieval bag and brought through the
umbilicus. It was removed from the umbilicus in a piecemeal manner because of the myriad of stones within it. This was done in a sterile manner while the gallbladder was still in the bag and the wound protector of the multi-trocar port, yet limiting the incision site. The umbilicus was closed with figure of 8 sutures followed by absorbable sutures.

She was discharged within 24 hours of the surgery after an overnight stay to monitor her pregnancy.

201GS

Transcervical Extended Mediastinal Lymphadenectomy Assisted Thoracoscopic Left Pneumonectomy

Rafael Garza Castillon, MD; Eitan Podgaetz, MD; Rafael S. Andrade, MD

University of Minnesota

Objective: To describe the technique for transcervical extended mediastinal lymphadenectomy assisted thoracoscopic left pneumonectomy.

Methods: 48 year-old female with a diagnosis of atypical carcinoid of the left lung hilum with suspected neck lymph node metastasis. She had multiple PET positive nodes in the left neck and 1 PET positive node along the left side of the trachea (levels 6 and 7). She underwent first a right cervical lymph node excision and a week later, a left modified radical neck dissection including levels 2 through 4 and levels 6 and 7. The procedures were staged because the likelihood of recurrent laryngeal nerve injury on the left side was relatively high given the extent of the lymph node dissection required on the left side of the trachea. A transcervical extended mediastinal lymphadenectomy and a thoracoscopic left pneumonectomy were performed immediately after the left modified radical neck dissection.

Results: There were no intra or postoperative complications. The left recurrent laryngeal nerve was preserved. The postoperative chest x-ray showed only postsurgical changes with a left chest-tube in place. She had a favorable postoperative course. She was discharged on oral pain medications on postoperative day 3. The left lung showed a 4.3 cm atypical carcinoid tumor. Neck and mediastinal lymph nodes were negative for malignancy, as well as the bronchial margin. 2/11 hilar lymph nodes were positive for malignancy.

Conclusion: Transcervical extended mediastinal lymphadenectomy assisted thoracoscopic pneumonectomy is a relatively safe procedure that facilitates the thoracoscopic bronchial dissection.

203URO

Opioid-Free Analgesia Following Robot-Assisted Laparoscopic Prostatectomy (RALP)

Carson Wong, MD1; Pankaj Goyal, MBBS2; Chirag Shah, MD3

1SouthWest Urology, LLC; 2Rice Memorial Hospital; 3University Hospitals Parma Medical Center Objective: Opioid analgesia following abdominal/pelvic surgery has potential adverse events and can delay return of normal bowel function. To minimize its use, we utilized scheduled acetaminophen with ketorolac for perioperative analgesia following RALP.
Methods: Prospectively collected data of consecutive RALP patients using perioperative acetaminophen with ketorolac for analgesia were reviewed. All procedures were performed under general anesthesia utilizing a balanced technique that was not standardized, with the exception that patients received acetaminophen 1000mg intravenous (IV) (15 minute infusion) and ketorolac 30mg IV prior to extubation. Following discontinuation of IV acetaminophen from the hospital formulary, oral acetaminophen 1000mg was provided in the preoperative holding area. Acetaminophen 1000mg IV/oral was administered q6 hours post-surgery, while ketorolac 30mg IV was administered at q8 hour intervals. Patients were ambulating the evening of surgery. Following passage of flatus and tolerating a regular diet, patients were discharged home. Opioid consumption was reviewed.

Results: 105 patients had a median age of 62 years and an American Society of Anesthesiologists (ASA) class of 3. Median operative time was 90 minutes and estimated blood loss was 75mL. Mean hospitalization and urethral catheter duration were 22.0 hours and 6.0 days, respectively. 22(20.9%) patients received opioid medication in the post anesthetic care unit (PACU), but did not require opioid medication on the hospital floor; while 72(68.6%) patients did not require opioid analgesia in the PACU/hospital floor. No immediate/delayed adverse events were noted.

Conclusion: Perioperative scheduled acetaminophen and ketorolac are effective for pain management following RALP, minimizing the need for opioid analgesia.

204GS

Our Experience; 9850 Cases Who Underwent Different Endoscopic Procedure: What Done or Not

Fatin R. Polat, İlhan Bali, Seyfi Emir, Ufuk Coşkunkan, Mouiad Alkhatib

Assoc. Prof. Dr. Namık Kemal University Medical Faculty, Division of General Surgery, TEkirdag- Turkey

Objective: It is essential to minimize complications during endoscopic procedure. The relationship between endoscopic procedure and patient safety is very important. The aim of this study is to evaluate endoscopic results in our surgical endoscopy unit.

Method: This study included retrospective review of 9850 patients who underwent different endoscopic procedures in the endoscopy unit of Yenikent state hospital between 2008 and 2014. Dates evaluated retrospectively. The results were processed with SPSS® ver. 21.0 (Chicago IL) p

Results: There were 48 (63%) men and 28 (37%) women. The median age of the patients was 57.74 (23-87) years. There was no major complications. Minor complications occurred in 3 (%0,3) of the patients who underwent percutan endoscopic gastrostomy.

Conclusions: Endoscopic procedures is a very efficient, safe and fast method for diagnosis and treatment. Minor complications occurred mainly with those who underwent percutan endoscopic gastrostomy.
Laparoscopic Assisted Percutaneous Endoscopic Colostomy Tube Placement: A New Technique For The Treatment Of Recurrent Sigmoid Volvulus

Erika L. Simmerman, DO; Andrew Simmerman, BS; Asif Talukder, MD; Brian Lane, MD

Augusta University

Objectives: In the United States sigmoid volvulus is frequently seen in the elderly and neurologically impaired, driving a search for less invasive but effective treatments that may obviate the need for resection. This case study describes a new technique for sigmoidopexy: a modified endoscopic approach for percutaneous endoscopic colostomy (PEC) tube placement utilizing a combined laparoscopic approach for safety.

Methods and Procedures: This is a retrospective case study of a patient treated at a tertiary care institution. The subject is a 55-year-old male with a history of longstanding constipation and recurrent sigmoid volvulus. Due to religious beliefs, the family refused any surgical procedures requiring bowel resection and alternative methods for definitive treatment were sought. The patient underwent laparoscopic assisted PEC tube placement with placement of three colostomy tubes for sigmoidopexy.

Results: The procedure was tolerated well and the patient had an uneventful postoperative course. With persistent symptoms of constipation and dysmotility the colon could be vented and irrigated via the colostomy tubes, an added benefit of the procedure. Two years post-operatively the patient has all three PEC tubes in place without complication or recurrence of sigmoid volvulus.

Conclusions: PEC tubes have been utilized for sigmoidopexy with various levels of success in the treatment of recurrent volvulus, although laparoscopic assistance in placement of PEC tubes has not been documented. Laparoscopic assistance allows for reduction of volvulus and decreases complications associated with PEC tube placement. This case demonstrates a possible new and safe technique for the treatment of sigmoid volvulus.

Preliminary Case Series Report on the Prospective Evaluation and Comparison of Combined Laparoscopic Cholecystectomy with Subsequent Incidental Appendectomy to that of Laparoscopic Cholecystectomy Alone as indicated among Seafarer Patients

Michael Dennis Isaias dela Paz, MD1; Nestor Batungbacal III, MD2; Miguel C. Mendoza, MD1

1Asian Hospital and Medical Center; 2AMOSUP Seamen's Hospital

The objective of the study is to evaluate and compare the combined laparoscopic cholecystectomy with subsequent incidental appendectomy to that of laparoscopic cholecystectomy alone with regards to safety and efficiency.

It's a prospective non-randomized trial among seaferers diagnosed with cholelithiasis who consent for laparoscopic cholecystectomy on the Control Group and laparoscopic cholecystectomy with subsequent Incidental Appendectomy on the Test Group. The standardized four-port technique of laparoscopic cholecystectomy was used on both the control and test subjects. In the test subjects, subsequent Laparoscopic
Incidental Appendectomy was done after the laparoscopic cholecystectomy using the same ports in the test subjects.

In a period of 6 months, a total of 51 adult subjects were enrolled. Two subjects dropped out due to comorbid condition. Only 6 subjects consented to do laparoscopic cholecystectomy with incidental appendectomy while the rest of 43 subjects underwent laparoscopic cholecystectomy only. The comparison among the group during the early stage of the study showed that the only differences between the two was the operating time wherein the laparoscopic cholecystectomy alone with incidental appendectomy takes longer of an average of 43 minutes than laparoscopic cholecystectomy alone. Overall, their intraoperative and postoperative outcome were the same.

The preliminary case series showed that laparoscopic cholecystectomy with incidental appendectomy is safe and feasible. Its outcome is comparable to that of laparoscopic cholecystectomy alone if done by a surgeon with expertise. No statistical significance can be concluded yet due to insufficient population. Recommendation to recruit more test subjects should be offered.

The F.I.N.E. (Fun, Innovative, Nice and Enthusiastic) Way of Learning Laparoscopic Skills through Endoscopic Painting as Laparoscopic Box Training Exercise

Michael Dennis Isaias dela Paz, MD; Miguel C. Mendoza, MD
Asian Hospital and Medical Center

The paper presents how the innovator supplements his training in laparoscopy by combining the art of painting and the science of laparoscopy. Endoscopic painting is the practice of applying medium of color or pigment to a miniature canvas. It is an art that unleashed unlimited creative forms and expressions to the trainee making the skill exercise fun and enthusiastic. It requires a modified laparoscopic box trainer equipped with a rotating circular pallele used as a container for the color paint medium and diluting solution, and an upper horizontal bar used for the application of miniature canvas. It uses a modified laparoscopic brush for the dominant hand of the trainee to apply the color and a laparoscopic grasper for the non-dominant hand to control and manipulate the canvas and the rotating circular palette.

Results: Through the innovator’s experience, endoscopic painting develops hand eye coordination, depth perception, spatial coordination, instrumental tactile feedback, tissue handling skills and improvement of skills of non-dominant hand. It was not a boring procedure since it does not involve repetitive movements. The tangible end result of the exercise is a miniature art masterpiece.

Conclusion: Endoscopic painting is a feasible laparoscopic skill exercise that can supplement the current standard laparoscopic box exercise. It is more fun and enthusiastic because it requires creative expression of forms and style in painting that could be a relaxing experience to the trainee.

Safer Alternative to Power Morcellation
Jonathan Y. Song MD1; Carlos Rotman, MD2

1Delnor Hospital; 2Weiss Memorial Hospital

Objective: To demonstrate our technique of Simplified Laparoscopic Abdominal Morcellation (SLAM) which will avoid the usage of power morcellators to remove large specimen following laparoscopic surgery.

Methods: The specimen is placed under traction and a scalpel if laparoscopic, or a Robot blade in Robot-assisted procedures, is used to cut the specimen into longitudinal strips so that they can be removed as larger pieces of specimen which will prevent tissue "crumbs" or debris from being scattered throughout the abdomen and pelvis. Many variations of this technique now exists since our original presentation in 1992. Our method has been refined over the years.

Results: The technique is very helpful during specimen extraction and minimizes any potential seeding of the peritoneal cavity so often seen with power morcellators. Our group's experience with SLAM dates back to 1992 and since then we have successfully completed thousands of myomectomies and hysterectomies, both total and supracervical.

Conclusion: SLAM is equally effective as part of conventional laparoscopic or robot-assisted procedures in removing large specimen, and does not leave significant tissue debris and dissemination of tissue as seen with power morcellators.

210GS

Laparoscopic Sleeve Gastrectomy as a Revision Procedure for Patients with Weight Regain After Laparoscopic Gastric Plication

Mohamed Abdallah Sharaan MD PhD

Alexandria University, Faculty of Medicine

Objective: Laparoscopic gastric plication was introduced as an alternative to other bariatric restrictive procedures with potential benefits of non resection or re-routing of the stomach or the bowel. It is considered investigational procedure and its long term efficacy and safety were not reported. The objective of this study was to study the efficacy and safety of laparoscopic sleeve gastrectomy as a revision procedure for patients who regained weight after laparoscopic gastric plication.

Methods: In all of the cases we took down the stitches of the plication first before doing sleeve gastrectomy. We assessed the feasibility, safety, operative difficulties, operative time, morbidity, mortality, weight loss and hospital stay. Pre-operatively upper GI series and laboratory work up were done, and also intra-operatively the upper GI endoscopy was used.

Results: 32 cases were included in this study, 19 female and 13 male. Average weight was 109+-11 kgs, average BMI was 43+-4 kg/m2. By upper GI series, all of the cases had fundus herniation. No intra-operative complications, No leaks, only 3 cases had strictures 5 weeks after sleeve and 2 of them required balloon dilatation, and the last managed conservatively. The average of 6 months percentage of excess weight loss was 55+-6%. No mortality.
Conclusion: Laparoscopic Sleeve Gastrectomy as a revision for weight regain after laparoscopic gastric plication is a feasible and safe procedure provided that sutures should be taken down and usage of extra-thick reloads. Laparoscopic sleeve gastrectomy can provide a accepted weight loss for patients regaining weight after plication.

212GS

**Intraoperative Bile Leaks Detected During Laparoscopic Cholecystectomy: Duct of Luschka**

Gretel Bugayong Puzon, MD; Roland Cinco, MD; Ray Sarmiento, MD; Srilansky Osigan, MD; Rafael Alexis Resurreccion, MD Asian Hospital and Medical Center

Laparoscopic cholecystectomy has now become the most common procedure being done all over the world. With the increase in the number of surgeries done arises the increase in a number of its complications.

Bile leak is a serious cause of morbidity and even mortality after a laparoscopic cholecystectomy. The occurrence of bile leaks originating from ducts of Luschka may be uncommon but it occurs with sufficient frequency and surgeons should always be mindful of these structures during surgery. Injuries usually occur during division of the cystic duct and cystic artery, and during dissection of the gallbladder from the liver bed. We present two cases of bile leaks occurring during these crucial steps in the process of laparoscopic cholecystectomy.

Identification and management of such leaks intraoperatively prevented occurrence of postoperative complications, increase costs of hospitalization including diagnostics and additional therapeutic interventions, hospital stay prolongation, conversion to open surgeries and possible litigations. Endoscopic retrograde pancreatography documented the presence of ducts of Luschka as well as an intact biliary tree during the same operation.

The importance of early detection of these structures and the potential injuries that they carry with them cannot be overemphasized. Meticulous dissection and careful identification of structures is of paramount importance to avoid complications of a supposedly routine surgery.

213GYN

**Permanent Occlusion of Uterine Arteries in Management of Abnormal Uterine Bleeding**

Adel Saad Helal, MD PhD; Mohammad Elsaid Ghanem, MD; Laila A. Elboghdady, MDMansoura University Hospital

Objectives: To assess the effectiveness of permanent bilateral occlusion of uterine arteries as a treatment modality of abnormal uterine bleeding.

Design: Prospective observational study.
Setting: Done in Mansoura University Hospital, Department of Obstetrics and Gynecology and private center (Mansoura Integrated Fertility Center- MIFC).

Patients and Methods: The study and follow up done from October 2011 to October 2014 including One hundred eighteen (118) premenopausal patients followed up for thirty six months. All of them completed their families and needing to preserve their uteri. The primary outcome measures were patient satisfaction, quality of life and improvements of pain and bleeding compared with pretreatment one. Secondary outcome measures included postoperative pain, complications, secondary interventions, and failures.

Results: One hundred and nine patients completed follow up for three years 109/118 (92.4%) reported their satisfaction as indicated by reduction in days of menstrual flow per cycle (3.7 ± 2.8 vs. 8.8 ± 6.2 days, p < 0.0001) also, significant improvement in quality of life scores (9 ± 1.2 vs. 2.6 ± 1.8 p < 0.0001). with a variable failure rate varies from 5.6% at 6 months to 3.9% at 36 months follow up.

Conclusion: Permanent bilateral uterine arteries occlusion may be a good alternative to radical surgery in management of abnormal uterine bleeding

214GS

The Clinical Impact of Body Mass Index on Laparoscopic Gastrectomy for Gastric Cancer

Kazuhito Yajima, MD, PhD; Yoshiaki Iwasaki, MD; Ryouki Oohinata, MD; Naoya Ishibashi, MD; Kazuya Takahashi, MD; Soichiro Natsume; Sota Kimura

Department of Surgery, Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital

Objectives: The aim of this study was to evaluate the clinical impact of body mass index (BMI, Kg/m2) on laparoscopic gastrectomy (LG) for patients with gastric cancer.

Methods and Procedures: Between 2007 and 2014, 513 consecutive patients underwent LG with regional lymphadenectomy for early gastric cancer. The patients were divided into three BMI groups: the lower (BMI<20, N=70), normal (20<=BMI<25, N=334), and high groups (25<=BMI, N=109). The clinicopathological characteristics and surgical outcomes of the three groups were compared. Postoperative complications were defined as any Grade II or worse complications according to the Clavien-Dindo classification.

Results: Regarding the patients’ backgrounds, the frequency of preoperative cardiovascular complications (lower: 11.4%, normal: 14.4%, high: 22.2%, P=0.038) differed significantly between the groups. As for surgical outcomes, the median total operation time (lower: 228 min, normal: 242 min, high: 267 min, P=0.003) and estimated blood loss (lower: 20 ml, normal: 25 ml, high: 60 ml, P<0.001) differed significantly between the groups, as did the frequency of postoperative complications (lower: 11.4%, normal: 14.1%, high: 24.8%, P=0.020).

Conclusions: In this study, BMI was closely correlated with the operation time, intraoperative blood loss, and the frequency of postoperative complications in patients that underwent LG. A highly skilled surgical team and suitable devices are required for LG procedures involving patients with high BMI.
The Incidence and Treatment of ileus After Laparoscopy-assisted Distal Gastrectomy with Roux-en-Y Reconstruction for Early Gastric Cancer

Kazuya Takahashi, MD; Kazuhito Yajima; Yoshiaki Iwasaki; Ryouki Oohinata; Naoya Ishibashi; Sota Kimura

Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital

Background and Objectives: The aim of this study is to clarify the incidence and treatment of ileus after laparoscopy-assisted distal gastrectomy (LADG) combined with Roux-en-Y (RY) reconstruction for early gastric cancer.

Methods and Procedures: Between 2007 and 2014, 488 consecutive patients underwent laparoscopic gastrectomy with regional lymphadenectomy for early gastric cancer. Among this, 147 patients with LADG-RY were enrolled. Our usual RY methods were following; jejunum was pulled up via the retrocolic route, gastrojejunostomy was anastomosed by circular stapler intracorporeally, and jejunojejunoscopy was performed by linear stapler extracorporeally. The incidence rate of ileus, clinicopathological characteristics, and treatment outcomes of the patients with ileus were evaluated. The median follow-up period after LADG-RY was 38.2 (range; 5.0 to 80.1) months.

Results: The incidence rate of ileus was 0.7% at 1-year, 6.2% at 3-year, and 7.7% at 5-year, respectively. The median period between LADG-RY and initial ileus was 25.0 (range: 2.1 to 36.5) months. The four patients were treated with conservative therapy including nasogastric tube and ileus tube. The urgent surgery was performed in three patients; Petersen’s hernia in one patient, volvulus of the small intestine in one, and adhesive ileus near the Y-anastomosis site in one. The patient with Petersen’s hernia was dead from the septic shock two days after the after the surgery of ileus.

Conclusions: The incident rate of ileus following LADG-RY was relatively high and 3 patients were needed for surgical treatment. The reconstruction after LADG should be selected not only short-term outcome but also long-term outcome including ileus.

Is Laparoscopic Appendectomy Safe in Appendicular Mass

Shaikh Abdul Razaque FCPS
Liaquat UlUniversity of Medical Health & Sciences Jamshoro Pakistan

Objectives: To evaluate the safety and efficacy of laparoscopic treatment of appendicular mass

Materials & Methods: A prospective study was conducted at Liaquat University ofMedical Health & Sciences Jamshoro Pakistan and a private hospital from January 2011 to December 2013 on all adult cases of appendicular mass treated by laparoscopy.

Results: Total cases of acute appendicitis were 231 , out of which appendicular mass were 30 cases (12.98%). Males were 19 and females were 11 cases. Age ranged from 25 to 60 years (median 35 yeas). Operation time was 100 minutes (Range 60-150 min.).There was one (3.33%) conversion to open. Postoperative stay was 4
days (range 3-6). Resumption of diet was on second day (1-3). Postoperative complications were wound infection in 2 cases (6.45%) , intra abdominal abscess in one case (3.33%) and prolonged ileus in one case (3.33%).

Conclusion: Appendicular mass can be treated by laparoscopy safely and avoids the second hospital admission.

218MUL

Effectiveness of an Integrated Video Recording and Replaying System in Robotic Surgical Training

Jacques Hubert, MD1; Yang Kun MD PhD2

1Departement of Urology, CHRU of Brabois; 2Zhong Nan hospital, Hubei Province, China

Objective: This study evaluated the effectiveness of using a video recording and replaying system in robotic surgical training.

Summary Background Data: Robotic surgical videos are reviewed to accelerate the acquisition of robotic surgical skills. However, few professional recording and replaying systems have been utilized during robotic surgical training. The effectiveness of these professional video systems should be investigated and validated.

Methods: A randomized study was conducted to analyze the performance of 60 participants, who were unfamiliar with surgical robotics, in a robotic simulator. Participants were enrolled in two groups to perform two exercises on a robotic simulator. One group was trained with the new protocol based on a recording and replaying system (Controller of Events on Simulator and Robot, CESIR) and the other group was trained with the conventional method. The overall scores were automatically evaluated by the simulator. The number of additional requests for reviewing the videos or watching the trainer's demonstration and the learning curves based on the overall scores were compared between the two groups.

Results: The group trained with CESIR presented a significantly improved learning curve in both exercises (p < 0.001) with more additional requests (p < 0.001) in comparison with the group trained with the conventional method.

Conclusion: In robotic skills training, the use of a recording and replay system is beneficial and more efficient than the conventional training method.

219GS

Laparoscopic Liver Resection and Partial Gastrectomy

Majid B. Kianmajd, DO1; Ashanthi Ratnasekera, DO1; Ely Sebastian, MD2

1Rowan School of Medicine; 2Lourdes Medical Center
Objective: Laparoscopic liver resection is a well-known surgical option for resection of hepatocellular carcinoma tumors. We present a case with a segment 3, 5cm hepatocellular carcinoma invading the antrum of the stomach.

Methods & Procedures: We are presenting a video case presentation of a laparoscopic liver resection of segment 3 and partial gastrectomy for a known hepatocellular carcinoma tumor invading the antrum of the stomach.

Results: Laparoscopic liver resection of segment 3 was performed in a 61 year old male who had a history of known hepatocellular carcinoma (HCC) of segment 3 of the liver. He had a history of cirrhosis and hepatitis C. He underwent transarterial chemoembolization of the mass. The mass was biopsy proven to be HCC. The mass was also extending into the antrum of the stomach. A preoperative EGD that was performed did not show intraluminal extension. The segment 3 liver mass was resected and partial gastrectomy performed.

Conclusion: Laparoscopic liver resection and partial gastrectomy is safe surgical option for known hepatocellular carcinoma invading the anterior portion of the stomach.

220MUL

Modified Open Trocar First-puncture Technique in Laparoscopic Surgeries of 23,000 Cases

Yan Liu Prof Dr Med

Department of OB/GYN, Huashan Hospital North, Fudan University.

Objective: To evaluate the safety of the modified open trocar first-puncture technique.

Methods: A retrospective clinical trial. Clinical data of 23,000 cases with modified open trocar first-puncture technique in laparoscopic surgeries and 10,240 cases with Veress needle puncture (control group) were analyzed retrospectively in our hospitals. There were a total of 64 experienced surgeons and 171 learners who attended the study.

Results: The achievement rate of the modified group was significantly higher than that of the control group (97.5 percent vs 87.2 percent, P<0.01). The difference of mean achievement rate between experienced surgeons and learners was 2.9 percent in modified group which was significantly lower than that of the control group (10.6 percent, P<0.01). The complications of modified group were significantly lower than that of the control group (0.3 percent vs 2.4 percent, P<0.01).

Conclusions: Compared with Veress needle puncture, the modified open first-puncture technique significantly increased the achievement rate, while reduced the risk of injuries at the same time and easy to grasp. It is a safe and practicable method of first-puncture for laparoscopic surgeries, especially for learners.

221GY

Applicate Evaluation of Hysteroscope Combined with Ultrasonograph Monitoring in the Transcervical Resection of Uterine Spetum (TCRS)
Xi Fu, MD; Yan Ding

Xinjiang Medical University

To evaluate application value of hysteroscope combined with ultrasonograph in TCRS

Methods: 64 patients with uterine septum underwent TCRS; incomplete uterine septum were 51 cases and complete uterine septum were 13 cases. The whole procedure was monitored by transabdominal ultrasound.

Results: Operating time 8 ~20min, resection of uterine septum time 5-8 min, average 6 min, blood loss 5~20ml average 10ml, hospitalization time 5~6d, average 5d. All patients had successfully performed operative hysteroscope. Pregnancy results were better compared with pre-TCRS (p<0.001). Conclusion: Hysteroscope combined with ultrasonograph was the better diagnostic method for uterine septum; hysteroscopic operation was standard operation method for uterine septum; transabdominal ultrasonograph has important value in increasing the success rate and decreasing the complications on TCRS.

224GS

The da Vinci Xi - Is This the Answer to Multi-quadrant Robotic Colorectal Surgery?

Bogdan Protyniak, MD; Russell Farmer, MD; Jeffrey Jorden, MD University of Louisville

Objective: The newly-introduced da Vinci Xi Surgical System hopes to address the shortcomings of its predecessor, specifically robotic arm restrictions and difficulty working in multiple quadrants. We compare the two robot platforms in multiquadrant surgery at a major colorectal referral center.

Methods: Forty-four patients in the da Vinci Si group and 26 patients in the Xi group underwent sigmoidectomy or low anterior resection between 2014 and 2016. Patient demographics, operative variables, pathology results, and postoperative outcomes were compared using descriptive statistics.

Results: Both groups were similar in age, sex, BMI, pelvic surgeries, and ASA class. The splenic flexure was mobilized in more (p=0.045) da Vinci Xi cases compared to da Vinci Si both for sigmoidectomy (50% v 15.4%) and low anterior resection (60% v 29%). There was no significant difference in operative time (219.9 min v 224.7 min; p=0.640), blood loss (170.0 mL v 188.1 mL; p=0.289), length of stay (5.7 d v 6 d; p=0.851), or overall complications (26.9% v 22.7%; p=0.692) between the da Vinci Xi and Si groups, respectively. All patients had >1mm circumferential margins and negative distal margins with no difference in lymphnode yield. The da Vinci Xi TME specimens were complete in 100% compared to 95.5% in the da Vinci Si (p=0.544).

Conclusion: The da Vinci Xi Surgical System allows the surgeon to operate in multiple quadrants and the narrow pelvis with greater ease and success compared to the da Vinci Si. The effect of robotic resection on rectal cancer pathologic outcomes needs further evaluation with randomized clinical trials.
Laparoscopic Hepatectomy is a Good Treatment Option for Elderly Patient with HCC and Cirrhosis

Tan To Cheung Prof Dr Med
The University of Hong Kong

Introduction: Laparoscopic liver resection has become an accepted practice in specialized center. Its role on patients with HCC and particularly in older patients has not been investigated thoroughly. Patients and Methods: From 2002 to 2013, 1230 patients received hepatectomy for HCC. 78 patients had received pure laparoscopic liver resection for HCC and cirrhosis. Patients were divided into 2 groups for comparison. Group 1 comprised of patients older than 65 years old. Group 2 comprised of patients equal or less than 65 years old. The short term and long term outcome were compared.

Results: There were 22 patients in Group 1 and 56 patients in Group 2. There were significantly more patients with comorbidity in Group 1, 77% vs 34% (P=0.001). The operation time for Group 1 was 181 minutes vs 210 minutes in Group 2 (p=0.56). The median blood loss was 150ml vs 210ml (p= 0.94). However there was lower threshold for blood transfusion in Group 1. Three patients (13.6%) required transfusion. There was no transfusion in Group 2. There was no mortality in both groups. The complication rate was 22.7% in Group 1 and 5.4% in Group 2 (p=0.063). The 5-year survival for Stage 1 disease was 100% in both groups. The 1-year, 3-year and 5-year survival for Stage II disease were 100%, 71.4% and 53.6% in Group 1 vs 94.7%, 88.8% and 49.3% in Group 2 (P=0.705).

Conclusion: Laparoscopic liver resection for HCC is well tolerated in older patients. Zero mortality can be achieved in well selected patients.

Minimally Invasive Video-Assisted Parathyroidectomy with Intraoperative Nerve Stimulation

Vasileios Drakopoulos, MD, PhD; Nikolaos Roukounakis, MD, PhD; Athanasios Bakalis, MD; Sotirios Voulgaris, MD; Tsogka Sotiria, MD; Eleni Plesia, MD, PhD; Spiros Drakopoulos, MD, PhD

District General Hospital of Athens (Evangelismos)

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.

A Long Term Study about the Outcomes of Treatment to Patient with Congenital Vaginal Atresia with Laparoscopic Peritoneal Vaginoplasty

Chenglu Qin, MD; Luo Guangnan, MD

1Shenzhen University; 2Luohu Hospital

Background: Many reconstructive surgical procedures have been used for vaginalagenesis. Almost all of them are surgically challenging, multi-staged, time consuming or leave permanent scars on abdomen or skin retrieval sites. But laparoscopic penitoneal vaginoplasty proved to make a simple and effective way for those patients.

Objective: This study was to survey the role of peritonel vaginoplasty with the assistant of lapaloscopy for the treatments to patients with congenital vaginal atresia.

Material and Methods: Total of 902 patients with congenital absence of vagina(including 860 cases of MRKH syndrome, 40 cases of androgen insensitirity syndrome, 2 cases 17 -hydroxyulase deficiency ) were treated with laparoscopic peritoneal vaginoplasty between 2001 and 2016. We followed up 362 cases (post-operation times is from 3 monthes to 14 years.), all patients have excellent normal vaginal function. 55 cases got biopsy of neovignal wall and show stratified squamous epithelium resembling normal vagina and having acidic Ph. The vaginal microecology in the women with peritoneal vaginoplasty can be either normal or abnormal.

Conclusion: Laparoscopic peritoneal vaginoplasty can be performed for MRKH, AIS and 17 -hydroxyulase deficiency patients with congenital vaginal atresia and got excellent normal vaginal function.

Laparoscopic Vaginal Reconstitution with Peritoneal or the Flap of Cyst Wall for Patient Who Gave Functional Uterus but with Congenital Complete or Partial Vaginal Atresia

Guangnan Luo, MD1; Chenglu Qin, MD2
Presented by: Baoyan Li, MD

1Shenzhen University; 2Luohu Hospital

Objective: The aim of this study was to explore (demonstrate) feasible treatments for patients with congenital vaginal atresia but with funtional uterus by using laparoscopic vaginal reconstruction with peritoneal or the flap of cyst wall underuterus .

Materials and Methods: We treated 9 cases patients with congenital vaginal atreas but with funtional uterus. 3 patients have previous failed vaginal construction and suffered amenorrhea and periodic abdominalgia
again. We treated those patients by using laparoscopic vaginal reconstruction with peritoneal or the flap of cyst wall underuterus, and followed up them for a period up to 14 months.

Results: This treatment has given excellent results over a period of months of follow-up. The patient has a resembling normal vagina and has normal mense one month later after the treatment.

Conclusions: Our finding suggest that laparoscopic vaginal reconstruction with peritoneal or the flap of cyst wall underuterus might be effective options for patient with congenital vaginal atresia. The postoperative management, neovaginal dilation are also imperative for the surgical success. However, a long-term observation for new treatment needs to be followed up.

232GYN

Syndrome: 8 Years of Experience with 685 Patients

Hongxin Pan, MD; Guangnan Luo, MD

Luohu Affiliated Hospital of Shenzhen University

Objective: To assess anatomical and functional outcomes of a novel laparoscopic peritoneal vaginoplasty technique (Luohu II operation) in patients with Mayer-Rokitansky-Kuster-Hauser (MRKH) syndrome.

Methods & Procedures: From January 2007 to January 2015, a total of 685 patients with MRKH syndrome underwent laparoscopic peritoneal vaginoplasty (Luohu II operation). Randomly selected frequency-matched age-comparable healthy women were serving as controls (n =453). Intraoperative parameters, postoperative parameters, and anatomical outcomes were recorded. Secual satisfactions were assessed by the Female Sexual Function Index (FSFI) questionnaire and were compared with the controls.

Result(s): Laparoscopic peritoneal vaginoplasty (Luohu II operation) was successfully performed in all 685 patients. The mean operative time and intraoperative blood loss were, respectively, 64.4±21.3 minutes and 18.0±12.7 ml. During median follow-up for 18 (range 11-96) months, mean functional neovaginal was 9.9±0.6 cm, including those who had no sexual intercourse. Anatomical success was achieved in all patients. At 12 months after surgery, functional success, as assessed by the FSFI questionnaire, was achieved in 92.7% of patients. The FSFI scores did not differ significantly between patients with MRKH and healthy women in a control group. No common long-term complications occurred.

Conclusion(s): Laparoscopic peritoneal vaginoplasty (Luohu II operation) may be regarded as a fast, effective and minimally traumatic technique that has satisfactory anatomical and functional outcomes for patients with MRKH syndrome.

233GS

Day-case Laparoscopic Cholecystectomy (Without Overnight Hospitalization): Experience of 78 Cases

Jun Liu, MD PhD; Antong Zang, MD; Lan Jin
Beijing Friendship Hospital, Capital Medical University

Objective: To explore the feasibility and safety of day surgery laparoscopic cholecystectomy.

Methods: From January 2015 to June 2015, 78 cases Day-case laparoscopic cholecystectomy (without overnight hospitalization) were performed in Beijing Friendship Hospital. The clinical data were retrospectively reviewed.

Results: 78 patients who had intended to undergo day-case laparoscopic cholecystectomy, 74 patients (94.9%) successfully accepted the surgery and were discharged no more than 4 hr after surgery, 2 of whom underwent Laparoscopic Transcyctic Common Bile Duct Exploration (LTCBDE) at the same time. 4 (5.1%) patients were admitted for overnight stay for different reasons and were discharged the day after the surgery. The average hospitalization time was 5.6-22.6h (8.3±3.8h). The mean operating time was 35-152min (80.0±19.7min). The mean hospitalization expenses was ¥5688.0-9768.4 (¥8318.0±848.5). Postoperative follow-up at the day of surgery, the first postoperative day and the seventh postoperative day showed that none of the patients suffer from severe complications.

Conclusions: Day-case laparoscopic cholecystectomy is safety and feasible, as long as patients were strictly selected, and experienced surgeons, anesthetists and nurses closely cooperation

234GS

**Application of Three Resections in Transumbilical Single-incision Laparoscopic Cholecystectomy (with 3600 Cases)**

Hai LinYu, MD

Songjiang Branch Shuguang Hospital Affiliated to Shanghai University of Traditional Chinese Medicine, Shanghai

Objective: To investigate the feasibility and safety of transumbilical single-incision laparoscopic cholecystectomy with reverse resection.

Method: We retrospectively analyzed the clinical data of 3600 cases of transumbilical laparoscopic cholecystectomy performed using ordinary extended straight laparoscopic instruments between November 2007 and December 2015. There are three methods in cholecystectomy. Anterograde cholecystectomy was used for the patients whose calot triangle could easily be distinguished (30.2%), retrograde cholecystectomy when difficult to exposed (55.2%), otherwise combined order method with retrograde method instead (14.6%). Among them, 2893 cases are gallbladder calculi, 396 cases are gallbladder polyp-like lesions, and the remaining 311 cases are gallbladder calculi with gallbladder polyp lesions or adenomyosis.

Result: All procedures were successfully accomplished, with an average operating time of (22.5±8.4) min (7-175 min), and intraoperative hemorrhage of (15.0±8.5) ml (2-200 ml). Fatty liver or schistosomal cirrhosis, etc, Calot triangle is difficult to expose, used retrograde method, so flexible application of three methods, finish operation with quite smoothly. The patients got discharged 2-5 days after the surgery. A total of 20 cases encountered complications as following: injury of partial or transverse injury of CBD, bleeding, bile leakage, burning injury in gastric serosa, port-site infection, small intestine damage. No mortality was observed. The
patients who got follow-ups 1-46 months after surgery were satisfied with the scar hidden. No incisional hernia was identified.

Conclusion: Using ordinary extended straight laparoscopic instruments, transumbilical laparoscopic cholecystectomy is feasible, safe and has a significant cosmetic effect.

235GS

Robotic-assisted Laparoscopic Traumatic Diaphragmatic Hernia Repair for Gastric Outlet Obstruction

Eve Bruneau, DO1; Roy Sandau, DO2; Nidhi Khanna, DO1

1Rowan University – SOM; 2Kennedy University Hospital/Rowan University

Introduction: Diaphragmatic injury is a morbidity of blunt trauma. Most cases are left sided and diagnosed acutely, therefore resulting in early repair. Rarely a diagnosis is made late, presenting with tension fecopneumothorax, gastric outlet or bowel obstruction. Literature reports various approaches to repair such as laparotomy, thoracotomy, or laparoscopically. Robotic repair is reported in hiatal and congenital hernias, but not those resulting from trauma. Our case report describes the repair of a chronic traumatic diaphragmatic hernia by robotic-assisted laparoscopy.

Method: A 32 year old male with a history of a motor vehicle accident and grade 1 splenic laceration and rib fractures several months prior, presented with sudden onset of epigastric pain and vomiting for one day. He was unable to tolerate any oral intake and denied fevers, chest pain, or shortness of breath. CAT scan revealed a diaphragmatic hernia containing the body of the stomach.

Results: Intraoperative findings showed an anterior left side diaphragmatic hernia with incarcerated stomach and omentum, causing a gastric outlet obstruction. Robotic-assisted laparoscopic reduction of these contents was performed and the defect was closed using mesh. The patient recovered and was discharged home on post-operative day two.

Conclusion: Chronic traumatic diaphragmatic hernias can be repaired using various techniques. Our case report demonstrates that robotic-assisted laparoscopic repair is a feasible option to treat traumatic diaphragmatic hernias.

236GS

Quantifying Intraoperative Laparoscopic Visual Field Opacity

Danielle Abbitt, BS1; Jay Redan, MD2

1University of Central Florida; 2Florida Hospital Celebration Health

Objective: Visual fields can be disrupted during laparoscopic surgery by condensation and debris, increasing risk of surgical error thereby increasing risk of patient injury. Quantifiable measures of time lost due to lens fogging have yet to be studied. This study investigated the effects of lens fogging.
Methods & Procedures: Prospective, observational study collected intraoperative information on number of times scope withdrawn due to obscured visual field, total amount of time the laparoscope withdrawn due to obscured visual field, patient’s age and gender, BMI, surgical time, estimated blood loss, type of procedure, and complication (if any) on 50 surgical patients at Florida Hospital Celebration Health. All follow-up pairwise comparisons made using Mann-Whitney.

Results: There was difference in the surgical time depending on number of times laparoscope was withdrawn (p = 0.029) and time the laparoscope was withdrawn (p = 0.001). There was difference in the categorized amount of blood loss depending on number of times laparoscope was withdrawn (p = 0.045) and time laparoscope was withdrawn (p = 0.006). Correlation was not found with other variables.

Conclusion: There was significant correlation between increased removal of the laparoscope with increased blood loss and surgical time. Possible reasons for increased blood loss and surgical time include visceral trauma and surgical complexity. It is likely that more complex procedures require more viewing angles and the surgeon is increasingly affected by a poor visual field. Several factors limited this study: small sample size, use of BMI as a measure of body fat, and surgeon proficiency.

237GS

Use of Mini-Laparoscopic Percutaneous Graspers During Laparoscopic Cholecystectomy

Nova Szoka, MD; Jin Yoo, MD
Duke University

Objective: Percutaneous instrumentation is a new area of development within minimally invasive surgery. This video demonstrates the use of percutaneous grasper during an elective laparoscopic cholecystectomy.

Methods & Procedures: Percutaneous instruments are low profile tools measuring 2.3mm in diameter. These instruments are inserted directly though the skin, thus achieving percutaneous entry into the peritoneal cavity. No trocar is needed. Due to the small diameter size of the instruments, surgical close of the entry site is not necessary. An elective laparoscopic cholecystectomy was performed. Two percutaneous graspers were used in lieu of the standard 5mm trocars in the right lateral subcostal and right epigastric positions. The dissection was carried out in the usual fashion. The critical view of safety was obtained.

Results: The gallbladder was successfully removed without complication. The use of percutaneous grasper in lieu of standard instruments did not hinder the operation. The incision sites from the percutaneous instruments were significantly smaller than standard 5mm incisions.

Conclusion: Percutaneous instruments can be safely used to perform laparoscopic cholecystectomy in select patients. Benefits of percutaneous instruments include decreased incision size which leads to decreased postoperative pain and improved cosmesis.
Transference of Advanced Laparoscopic Surgery Knowledge and Skill Using an Off-the-Shelf Distance Learning Platform

James C. Rosser, MD1; Jeffrey Fleming2; Jaimie Nakagiri2; Katherine Mia Choi2; Timothy Legare2; Elliot Griffith2

1Florida Hospital Celebration Health; 2UCF College of Medicine

Objective: To evaluate a laparoscopic skills course for transference of knowledge and skill using a distance learning platform constructed from off-the-shelf materials and commercially available software.

Methods And Materials: Sixteen medical students without prior laparoscopic surgery experience were assigned to one of two cohorts to complete the previously validated Top Gun Laparoscopic Skills and Suturing Program. Group 1 (n=8) received traditional in-person instruction, and group 2 (n=8) received instruction through the distance learning platform. The platform consists of a proprietary laparoscopic trainer, a laptop, two web cameras, a headset, internet meeting software, a 30o, 10-mm laparoscope, and a laparoscopic monitor. A cumulative score was calculated for each participant from compilation of all timed laparoscopic drills. Participants received a percentile ranking against a national registry of more than 750 physicians who have completed the in-person course.

Results: Average cumulative times were converted to percentile rankings with the following results. Group 1 achieved an average percentile ranking of 64.4 ± 21.6 and Group 2 achieved and average percentile ranking of 50.0 ± 27.1. Both groups achieved an average performance at or above that of the average trained surgeons and no significant difference in performance was seen between the two groups (two sample t-test, p>0.05).

Conclusion: An off-the-shelf distance learning platform can be successfully used to transfer laparoscopic knowledge and skills with similar efficacy as an in-person course.

A Meta-analysis of Sacrocolpopexy as a Treatment of Pelvic Organ Prolapse

Juan Liu MD PhD

Third Affiliated Hospital of Guangzhou Medical University

Objective: To compare the efficacy and safety of abdominal sacrocolpopexy and laparoscopic sacrocolpopexy as a treatment of pelvic organ prolapse.

Methods: According to the in and out standards, we located studies through PubMed, Wanfang Data, CNKI net. Terms were: “sacrocolpopexy”, term limited was in the title or abstract; the deadline for publication was from 2000 to 2015. There were 8 studies located including 3852 cases. We assessed quality of studies by using RevMan 5.2 statistical software.

Results: Compared with the ASC group, the blood loss WMD=--100.68 (95% CI: -141.75~ -59.61, p<0.01), hospital stay WMD=-1.77 (95% CI: -2.04~ -1.49, p<0.01), gastrointestinal complications OR=0.30 (95%
CI:0.15~0.59, p<0.01, Pulmonary complications OR=0.59 (95% CI:0.38~0.92, p=0.02, Blood transfusions OR=0.47 (95% CI:0.24~0.91, p=0.03), the above differences were statistically significant. Operating time WMD=0.06 (95% CI:-0.55~0.67, p=0.84, urinary complications OR=0.41 (95% CI:0.14~1.24, p=0.11), Cardiovascular complications OR=0.31 (95% CI:0.16~0.58, p=0.49), mesh exposure OR=1.60 (95% CI:0.81~3.18, p=0.18, the above differences were statistically significant.

Conclusion: LSC can significantly reduce the blood loss, blood transfusions and the hospital stay of the patients, but it cannot shorten the operating time. Meanwhile, LSC can significantly reduce postoperative ileus with the main symptoms of gastrointestinal complications and a variety of respiratory complications, but for the urinary system, the cardiovascular system and the mesh exposure, LSC does not show its advantages.

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240GYN

**Clinical Aspects of Mayer-Rokitansky-Kuster-Hauser Syndrome in a Chinese Population: An Analysis of 685 Patients**

Hongxin Pan, MD; Guangnan Luo, MD; Chenglu Qin, MD

Luohu Affiliated Hospital of Shenzhen University

Objective: The aim of this study was to use the VCUAM classification system to describe the spectrum of congenital malformations in a large cohort of 685 patients affected by MRKH syndrome.

Methods & Procedures: From January 2007 to January 2015, a total of 685 patients with MRKH syndrome characterized by primary amenorrhea were treated in the Department of Obstetrics and Gynecology at the University Hospital of Shenzhen (China). Clinical examinations, abdominal or perineal/rectal ultrasound, magnetic resonance imaging, hormonal profile, karyotype and laparoscopy were collected.

Results: We identified associated abnormalities in 25 out of 685 (3.6%) cases of MRKH. The major karyotype of MRKH patients was 46, XX; abnormal karyotypes were found in 2 cases.

Conclusions: In the large cohort of 685 patients of MRKH syndrome, we reported the VCUAM classification and karyotype of MRKH patients in China. The lower rate of associated malformations reported in this study suggests that further multi-center study should be conducted with an increased sample size of MRKH patients.

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245MUL

**A Novel Scoring System Helps Establish Competency for Laparoscopic Novices**

Kenneth William Bueltmann, MD; Marek Rudnicki, MD, PhD

University of Illinois MGH/ Advocate Illinois Masonic Medical Center

Objective: Residency programs are increasingly challenged by the complexity of laparoscopic simulation technology and their utilization in the training curriculum. Common software can easily be leveraged to
uniformly manage the complexity of metrics which virtual reality simulators provide. This novel scoring system can be used to establish and monitor the learning curve.

Methods & Procedures: A laparoscopic simulator was used to collect trials from the hand-eye coordination task of the Basic Skills Module. Sampling included residency applicants over a two year period. Three trials were attempted at the hand-eye coordination task. Microsoft Suite was used to extract data from the simulators. A simplified percent scoring system was developed to discriminate the level of training of the learner relative to prior performance of expert users. Accumulated scores were subjected to ANOVA and Tukey’s test using SAS Enterprise 6.1.

Results: Scores were obtained from a sample of 129 general surgery residency applicants. Average score and standard errors for the first, second, and third repetitions were 54.01 ±1.17, 62.41±0.98, and 65.38 ±0.80, respectively. Tukey’s test revealed no significant differences between trials 2 and 3. Significance was found between trials 1 and 2, and between trials 1 and 3 (p<.001).

Conclusion: Use of a basic scoring system helps reflect baseline competency and progress for the new laparoscopic learner. Using this simple tool, laboratory proctors can rapidly determine the user’s position and trend on the learning curve. Efficiency gained through this process provides utilizes a consistent performance baseline for advancement through the simulation curriculum.

246GS

Laparoscopic and Robot-assisted Liver Resections of Posterior Liver Segments

Mikhail Efano, MD, PhD; R.B. Alikhanov, MD, PhD; V.V. Tsvirkun; I.V. Kazakov; O.V. Melekhina; P.P. Kim; A.N. Vankovich; K. D. Grendal

Moscow Clinical Scientific Center

Objectives: To evaluate the learning curve of the laparoscopic liver resections compared with robot-assisted liver resections.

Material and methods: Results of 92 consecutive minimally invasive liver resections were analyzed: 24 robot-assisted laparoscopic (performed in 2013-2016) and 68 laparoscopic resections: from 2010 to 2014 (n=29) and after 2014 (39). The complexity of liver resections was estimated by difficulty index for laparoscopic liver resection (G. Wakabayashi, et al, 2014). When evaluating results of operations we compared the duration of operations, blood loss and morbidity (grade II-IV Clavien-Dindo). Indications for liver resection included colorectal cancer metastases, HCC, FNH, hemangioma, hydatid echinococcosis (included only total pericystectomy), alveolar echinococcosis.

Results: Since the beginning of robotic program, robot-assisted liver resection had a higher difficulty index (7,67±1.8) and a high rate of posterior liver segments resection (55%). Laparoscopic resection performed before 2015 had a significantly lower difficulty index (5,98±1,5) and a lower rate of posterior liver segments resection (10%). There were no differences in terms of blood loss: 301 (100-700) ml vs 486 (20-2000) ml, and morbidity: 14% vs 25%. Laparoscopic resection performed after 2014 also had a lower mean difficulty index (5.93±1,7), but the rate of posterior liver segments resection increased significantly (59%). The rate of complications (21%) and blood loss: 303 (0-2500) ml, did not significantly changed.
Conclusion: The learning curve for robot-assisted liver resections is shorter in comparison with laparoscopic resections. The inclusion of robot-assisted resections in program of minimally invasive liver surgery allows quickly increase the complexity of laparoscopic liver resections.

247GS

Laparoscopic Resection of Giant Liver Cyst and Repair of Diaphragm Injury

Raquel Elisa Redondo, MD; Rami Lutfi, MD

Presence Saint Joseph Hospital

Objective: Giant liver cysts can be managed in a laparoscopic or open fashion. Supero-posteriorly located cysts can be challenging to access laparoscopically, and many would argue for an open approach in this scenario. Here we demonstrate that even large cysts in a supero-posterior location can be safely and effectively treated in a laparoscopic fashion.

Methods & Procedures: We present a single case video demonstration of a patient with two giant liver cysts managed laparoscopically.

Results: This patient has two cysts: an anterior cyst which is straight forward and easily accessed, and a supero-posterior cyst that is very challenging but also successfully managed without necessitating a conversion to open procedure. A complication of diaphragmatic injury is encountered, and this is also managed laparoscopically.

Conclusion: This video serves as an example to demonstrate, that in the hands of the experienced laparoscopic surgeon, excision of a giant hepatic cyst even in the supero-posterior aspect of the liver is achievable and anticipated complications can also be managed in an entirely laparoscopic fashion.

248GS

How to Control Inferior Mesenteric Artery Avulsion in Robotic Surgery

Bogdan Protyniak, MD; Russell Farmer, MD

University of Louisville

Objective: The traditional approach to major inadvertent bleeding during laparoscopy is conversion to open. Responsible factors include in-line instruments, assistant-controlled camera and/or retraction, which is difficult to coordinate in high-pressure situations. The introduction of robotic endowristed instruments, fixed retraction, and surgeon-controlled camera challenges this concept.

Methods & Procedures: A 70 year-old woman with peripheral arterial disease underwent robotic sigmoid resection with rectopexy for symptomatic rectal prolapse and constipation. Standard surgical robot sigmoidectomy port placement was used followed by medial to lateral dissection. The inferior mesenteric artery was inadvertently avulsed from its origin at the aorta while retracting the sigmoid mesentery.
Results: Despite alarming bleeding, the surgeon controlled the situation robotically by clamping the arteriotomy and prevented an immediate conversion to open. This maneuver allowed time to obtain better exposure, notify the vascular team, and safely undock the robot in preparation for definitive repair. The arteriotomy was sutured through a small lower midline incision and a rectopexy was performed. Apart from requiring two units of packed red blood cells and overnight observation in the intensive care unit, the patient was discharged on the third hospital day without further events.

Conclusion: Robotics is the next step in evolution from open surgery. It allows for minimally invasive access, but surpasses laparoscopy in precision, direct surgeon control, and superior visualization. Bleeding is a common complication shared by both laparoscopy and robotics, however, advantages of the latter allow for safer handling of the most serious of vessel injuries.

Minimally Invasive Approach for Right Hemicolecotomies; Texas Endosurgery Institute Experience Since 1991

José P. Fuentes Flores MD1; Miguel Hernández, MD2; Morris E. Franklin, Jr.,MD2

1Programa Multicéntrico ITESM-SSA; 2Texas Endosurgery Institute

Over the last decades, colorectal laparoscopic surgery has gained more popularity. For right hemicolecotomies, specifically, an ileocolic anastomosis has to be done to re-establish the intestinal transit. This can be performed either in an intracorporeal or extracorporeal fashion, depending on the skills and competence of the surgeon.

Objective: To compare outcomes between intracorporeal versus extracorporeal anastomosis during laparoscopic right hemicolecotomies at our center.

We retrospectively examined all patients who underwent a laparoscopic right hemicolecotomy between January 1991 and February 2016 affected with either benign or malignant colorectal disease at our center. Six hundred and six patients were divided into two groups: intracorporeal anastomosis (421) and extracorporeal anastomosis (185). For the intracorporeal anastomosis group: the average surgical time was 152 min (range: 131- 173), intraoperative complications were 1.4%, postoperative complications were reported in 4.8%, total hospitalization time in patients without comorbidities was 4 days. This was compared to 159 min (range: 126-192), 3.5%, 14.7% and 5 days in the extracorporeal group. The experience of more than 25 years in the Texas Endosurgery Institute using colorectal laparoscopic surgery suggest that intracorporeal anastomosis for laparoscopic right hemicolecotomy improved patient outcome compared with patients who underwent extracorporeal anastomosis. With intracorporeal anastomosis we have had faster surgical times, lesser blood loss, lesser intraoperative (anastomotic leaks, serosal tears) and postoperative complications (leaks, surgical site infections, abscess formation, ileus) as well as shorter hospitalization times compared to extracorporeal anastomosis. However, intracorporeal anastomosis is, without doubt, more difficult to perform, demanding the surgeon greater skills and competence in the minimally invasive field.
The Usefulness of Steep Trendelenburg Position on Left-side Laparoscopic Colorectal Resection

Hidetaka Kawamura, MD; Yujiro Nakayama; Misato Amaki; Daisuke Nakano; Hiroshi Matsumoto; Tatsuro Yamaguchi; Keiichi Takahashi

Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital

Background and Objectives: Trendelenburg position is one of the most important methods for obtaining a clear view of surgical field in left-side laparoscopic colorectal resection (LLAC). On the other hand, that affects circulation dynamics and respiratory condition of patients, and cause postoperative neuromuscular complications. This study aimed to investigate the usefulness and morbidity of steep Trendelenburg position (STP).

Methods and Procedures: Between 2003 and 2015, 682 consecutive patients who underwent LLAC in Tokyo Metropolitan Cancer and Infectious Center Komagome Hospital were enrolled. We evaluated patient’s characteristics, pneumoperitoneum pressure, and postoperative complications associated with positioning retrospectively. Complications were investigated according to the Clavien-Dindo classification.

Results: In 682 cases, median age was 66 years old and median body mass index (BMI) was 26.5 kg/m2. Female were 307 (45.0%) and male were 375 (55.0%). In all cases, patient’s body was tilted 20-30° in LLAC. In one case, we converted from LLAC to open surgery because the patient’s ventilation worsened in steep Trendelenburg position. As for surgical outcomes, median operation time was 135 min, and estimated blood loss was 0 ml. There were no complications caused by steep Trendelenburg position operatively and post operatively. In all cases the pneumoperitoneum pressure was 8-10mmHg.

Conclusions: Steep Trendelenburg position in LLAC is useful for good view and low pneumoperitoneum pressure.

Comparison of Single Incision Laparoscopic Percutaneous Extraperitoneal Closure (SILPEC) with Open Repair for Pediatric Inguinal Hernia: A Single-Center Retrospective Cohort Study of 2028 Cases

Hizuru Amano, MD1; Hiroo Uchida, MD, PhD2; Hiroshi Kawashiman, MD1; Yujiro Tanaka, MD, PhD1; Tadashi Iwanaka, MD, PhD1

1Saitama Children’s Medical Center; 2Nagoya University Graduate School of Medicine

Objective: Laparoscopic approach to pediatric inguinal hernia has gained popularity. We developed single incision laparoscopic percutaneous extraperitoneal closure (SILPEC) to improve cosmesis in 2009. The objective of this study was to assess the feasibility of SILPEC compared with traditional open repair (OR).

Methods & Procedures: This is a single-center retrospective cohort study of 2028 children operated for inguinal hernia between April 2005 and August 2014. Patients underwent either SILPEC or OR based on their preferences. Clinical outcomes and patient satisfaction were investigated.
Results: 1033 patients (545 female, 488 males) underwent SILPEC, and 995 patients (363 female, 632 males) underwent OR. There was no difference in the recurrence rate (0.4% in SILPEC and 0.3% in OR, p=0.74). In the SILPEC group, 41% of patients with clinically unilateral inguinal hernia were observed to have a contralateral patent processus vaginalis and underwent repair of both sides. Contralateral metachronous inguinal hernia (CMIH) was seen in 3/959 cases in SILPEC and in 44/900 cases in OR (p<0.001). Concerning complication rate, there was no difference between SILPEC and OR (P=0.06). In the SILPEC group, 4 cases (0.4%) of intraoperative vascular injury and 1 case (0.1%) of postoperative orchitis occurred, while there was no complication in OR. Our questionnaire survey revealed that both groups had an equally high level of satisfaction for operative scar.

Conclusion: There was no difference in recurrence or complication rates between SILPEC and OR. Prophylactic contralateral SILPEC was effective for preventing CMIH. SILPEC proved to be a feasible and safe procedure compared with OR.

253GS

The Application of Laparoscopic Surgery in Radical Resection for Hilar Cholangiocarcinoma

Dexing Chen, MD PhD; Guangyuan Xing, MD

Qian Wei Hospital of Jilin Province

Objective: The paper is to explore the feasibility of using laparoscopic minimally invasive technology instead of traditional open surgery technology to complete radical surgery for hilar cholangiocarcinoma bismuth III and having the left liver and the caudate lobe removed for hilar cholangiocarcinoma bismuth III. The application of minimally invasive techniques can reduce the occurrence of surgical complications and improve cure rate, due to the reducing local and systemic physical trauma.

Methods: During 2008-2015, we completed 103 cases of laparoscopic exploration for patients with hilar cholangiocarcinoma, of which 32 cases, accounting for 31% of the patients, underwent laparoscopic radical resection of hilar cholangiocarcinoma (Bismuth I: 18 cases, Bismuth II: 13 cases, Bismuth III: 1 case). The surgery has three main steps. Step 1: Resect the tumor and enough hepatic duct, or even the whole left liver. Step 2: Clean hepatic hilar lymph node. Step 3: Use Roux-en-Y anastomosis in laparoscopic gastrointestinal tract reconstruction.

Results: This group of 32 cases had radical resection, in which 3 cases occurred biliary fistula, and were cured in postoperative 17 d, 15 d, 10 d respectively. There are no abdominal infection and the portal vein intraoperative injury in this group of 32 cases. None of the cases died.

Conclusion: Laparoscopic surgery can complete resection of bile duct lesions and clean the lymph nodes, fat, and nerve fibre. Laparoscopic Roux-en-Y anastomosis has been perfect. Laparoscopic radical resection for hilar cholangiocarcinoma is feasible

256GYN

A Single Center Experience on Robot-assisted Radical Hysterectomy and Extended Pelvic Lymph Node Dissection: The Impact of Learning Curve on Complications, Foley Catheter and Pain Assessment
Objective: To trace the learning curve of the robot-assisted gynecologic surgery at Fudan University Affiliated Ob & Gyn Hospital. Sought to assess the impact of learning curve in regards to surgery time, blood loss, pathology, complications and Foley catheter.

Study design: From 2015 Feb to 2016 Jan, a total of 121 consecutive patients who required having minimal invasive surgery of cervical cancer (stage Ia2-IIb1) were treated by robot-assisted surgery at our center. We traced the learning curve of 3 qualified gynecologic surgeons doing robotic surgery with extensive experience of open and laparoscopic surgery. Clavien complication system was applied to classify the complications. Data of surgery were collected and analyzed.

Results: The results showed a safe learning curve in regard to the surgery time, blood loss and pathologic results. Overall, 25 complications were reported in 14 of 93 patients and significantly decreased after 60 procedures. Minor complications (Clavien grades 1-2) represented the most frequent events, with a significant drop in group 3 (P =.001).

Conclusions: Surgeons with extensive open and laparoscopic experience present a safe learning curve in regard to robot-assisted radical hysterectomy and pelvic lymph node dissection. No detrimental effect is to be expected. The results also demonstrate there is no defect for robot-assisted radical hysterectomy and extended pelvic lymph nodes dissection along the time counts.

257GS

Predicting Financial Burden In The Surgical Candidate: Incisional Hernia Repair With Mesh Prosthesis

Kenneth William Bueltmann, MD, MPH, MBA; Marek Rudnicki, MD, PhD; John P. Niciforos, MD, MS

Advocate Illinois Masonic Medical Center

Introduction: The use of mesh prosthesis for incisional hernia repair has become commonplace, whether delivered through open or laparoscopic technique. Given the availability of large administrative databases, one can recognize the potential to forecast charges based upon the presence of individual patient characteristics.

Method: The National Inpatient Sample contains ICD-9 codes specific to mesh prosthesis placement for incisional hernia repair. Patient records were abstracted for the ages 18-45 to homogenize observations and minimize age related bias. The NIS comorbidity software was used to identify patient conditions. Fisher transformed Pearson estimates were calculated using SAS9.3. According to NIS, 1.2M received mesh from 1998-2011.

Results: Females composed 66% of this population. Average total charges were $30,538. Total charges were found to be grossly correlated with comorbidity (.17, p<.001) using age, sex, region, hospital type, payer, race, region, location, surgical technique, and income level as partial variables. Stratified analysis demonstrated concordance (.02 to .29) among 23 of 25 comorbidity groups. Stratification by gender weakened this effect,
leaving pulmonary circulation, coagulopathy, weight loss, and electrolyte disorders with concordances above .01 for both groups. Regression revealed that weight loss (.11), electrolytes (.15), coagulopathy (.29), and pulmonary circulation (.22) maintained individual strengths in predicting total charges (p<.001). Female gender revealed lower total charges (-.06, p<.001).

Conclusion: Financial burden associated with mesh repair of incisional hernias may be predicted when considering patient comorbidity. Furthermore, coagulopathy, pulmonary circulation, electrolytes, and weight loss demonstrate the strongest effects. One can also expect lower total costs in female patients in respect to linkage with total charges.

258GS

A Population Based Endoscopic Screening Approach for GERD Utilizing Primary Care Physicians and Telementoring

James C. Rosser, Jr., MD1; Jamie Nakagiri, BA2; Robyn Gardner, PAC1; Timothy Legare, MS2; Jeffrey P Fleming, BS2; Katherine Mia Choi, BS2

1Florida Hospital Celebration Health; 2UCF College of Medicine

Objective: The rising incidence, error in diagnosis/treatment, and cost surrounding gastroesophageal reflux disease (GERD) and esophageal cancer dictates that we re-evaluate our current approach. This study features training primary care providers to perform transnasal esophagastroscopy (TNEG) utilizing telementoring methodology and technology to screen patients before committing to a diagnosis and treatment.

Methods and Procedures: A primary care physician underwent a vigorous training program for performing TNEG. Patients were scoped under supervision using a flexible transnasal esophagoscope providing visualization and diagnosis of the esophagus and stomach and telementoring technology via an internet-based telementoring and telepresence device that allows surgeons to connect remotely to the point of care. The physician performance was rated based on established parameters set by previous studies. Communication, directional accuracy, transmission stability, and procedural errors were also documented.

Results: 13/18 procedures were completed in an average of 11 minutes (Range 7-19 min) with the physician being found competent after 8 procedures. Procedures yielded 3 cases of suspected Barrett’s esophagus, 9 hiatal hernias, 3 gastritis, and 1 erosive esophagitis. There were no adverse events. There were an average of 8 Internet slowdowns per session (Range 0-16) and 2 cases of Internet connection failure, with none of them affecting patient care. Patient surveys were administered for 10/18 of the procedures, showing an average discomfort of 1.6-2.6 (1-9) with 1 being no discomfort.

Conclusion: Results suggest that TNEGs performed by primary care physicians can be safe, efficient and effective. This approach may be used to increase diagnosis and treatment accuracy for GERD and esophageal cancer screening.
259GS

**A Study of Feasibility and Outcomes of Single Incision Trans-Umbilical Laparoscopic Cholecystectomy using Conventional Laparoscopic Instruments**

Vineet Sharma, MD; Lakshman Agarwal, MS; Sumita A. Jain MS; Neel Shah, MS

SMS Medical College & Attached Group of Hospitals Jaipur Rajasthan India


**Methods & Procedures:** A hospital based prospective study of 60 patients of ultrasonography proven cholelithiasis who gave consent for the study and have underwent single incision trans-umbilical laparoscopic cholecystectomy from October 2014 to October 2015.

**Results:** The mean operative time was 32.20 min (range: 22–45 min). Gall bladder perforation occurred in 1 case (1.66%) with calculi spillagewhich was managed by using laparoscopic stone removal forceps. There was no conversion to the open technique in any of the cases. Drain insertion was not required in any of the case and was not done. 52 patients (86.67%) discharged on the 1st postoperative day and 08 patients (13.33%) discharged on the 2nd postoperative day. The average wound length measured on 3rd postoperative month was 2 cm (range, 1.3–2.1 mm); while average score of patient satisfaction of the surgery was of 9.32 (range, 7–10).

**Conclusion:** In uncomplicated gall bladder disease, single incision laparoscopic cholecystectomy is feasible and safe with excellent cosmetic results and high grade of patient satisfaction and can be performed with the conventional laparoscopic instruments with adequate experience.

260GS

**Laparoscopic Reduction of Contents with Plication of the Diaphragm with Reinforcement by Mesh Placement**

Abhay Sikaria, MS; Lakshman Agarwal, Prof Dr Med; Sumita A. Jain, MS; Vineet Sharma, MS; Neel Shah, MS

SMS Medical College & Attached Group of Hospitals Jaipur Rajasthan India

**Objective:** A rare case of eventration of left Hemi Diaphragm with thoracic kidney, spleen, stomach, splenic flexure of colon & ascending colon operated laparoscopically

**Methods & Procedures:** A patient with acute abdominal pain with copious nasogastric tube aspiration was admitted in the hospital. The endoscopy showed normal stomach, CT scan showed eventration of left hemi diaphragm with thoracic kidney, spleen, splenic flexure of colon, stomach & ascending colon. This patient was managed laparoscopically with mobilization of the spleen, kidney & splenic flexure of colon & and ascending colon in abdominal cavity and plication of left hemi diaphragm with reinforcement with mesh placement.
Results: The eventeration of diaphragm can be managed laparoscopically and the patient had no post operative complications and was discharged on 3rd post operative day.

Conclusion: The eventeration of diaphragm can be managed with minimal invasive surgeries with less blood loss, less peri and post operative complications and with less chances of incisional hernias.

Specialty Trends in Robot-Assisted Surgery

Mark Finkelstein, BS; Khawaja Bilal; Michael Palese
Icahn School of Medicine at Mount Sinai Hospital

Objective: Examine trends in the utilization of robot-assisted surgery stratified by specialty.

Methods & Procedures: The New York Statewide Planning and Research Cooperative System collects information on every inpatient encounter in New York. We queried for robot-assisted procedures in the period from 2009 to 2013 and categorized every procedure based on specialty into one of: urological, otolaryngological, general, cardio-thoracic, gynecological, orthopedic, or otherwise uncategorized.

Results: Of the 38,243 robot cases analyzed, 20,127 were categorized as urology-related, 350 as otolaryngology-related, 3,041 as general, 1,738 as cardio-thoracic, 11,712 as gynecologic, 735 as orthopedic, and 540 as uncategorized. The number of robotic cases for each category rose during these periods, however, the rise was asymmetric. The proportion of cases that could be categorized as urology-related dropped significantly from 70.3% to 39.7% over the period of interest. The number of urology robotic-assisted cases has remained steady. By contrast, all other surgical categories rose to encompass a greater percentage of all surgeries, with gynecology-related cases rising from 22.3% to 33.9% of all robot-assisted surgical cases. Unlike procedures in other fields such as hysterectomies (6.0%) and internal mammary bypasses (0.9%), urologic procedures such as radical prostatectomies started with high utilization of robotic technology (66.7%).

Conclusions: All specialties are witnessing increases in the utilization robotic-assisted surgery. Urology, as an early adopter, has remained steady in number of cases, suggesting the standardization and integration into practice of robotic technology. Understanding these trends among different specialties can aid in resource allocation and in ensuring proper planning to meet future demand.

Socioeconomic Trends in Robot-Assisted Surgery

Mark Finkelstein, BS; Khawaja Bilal; Michael Palese
Icahn School of Medicine at Mount Sinai Hospital

Objective: Examine socioeconomic trends in the utilization of robot-assisted surgery as compared to other surgical modalities.
Methods & Procedures: The New York Statewide Planning and Research Cooperative System collects information on every inpatient encounter in New York State. We used this database to identify hysterectomies (H), radical prostatectomies (RP), total knee replacements (TKR), single internal mammary coronary bypasses (MCB), and partial nephrectomies (PN) during the period from 2009 to 2013. Use of robotic assistance was analyzed with patient socioeconomic information including gender, race, ethnicity, poverty rate, and rurality.

Results: A total of 274,889 cases were included. The proportion of cases that involved robotic assistance rose during the period of interest, however, the total number of cases have generally fallen or increased at a slower rate. Generally, a Non-Hispanic, Caucasian and urban patient from an area with a lower poverty rate was more likely to receive robotic-assisted surgery than an African-American and rural patient from an area with a higher poverty rate. For TKR and PN, males were more likely than females to receive robot-assisted surgical care; a trend that is not seen for MCB where no statistical difference is seen.

Conclusions: Socioeconomic divides exist in the dispensation of robotic technology for treatment and should be further investigated.

263URO

Comparative Analysis of Utilization Trends, Costs and Inpatient Outcomes for Open and Robot-assisted Partial Nephrectomy for the Treatment of Malignant Renal Neoplasm

Khawaja Hassan Bilal, MD; Mark Finkelstein; Michael A. Palese, MD

Icahn School of Medicine - Mount Sinai Health System

Partial nephrectomy has become the surgical treatment of choice for malignant renal neoplasms in New York State (NYS). The objective of this study was to compare the utilization trends and inpatient-outcomes of open partial nephrectomies (OPN) and minimally-invasive robot-assisted partial nephrectomies (RPN).

Retrospectively studied 4,978 cases from the Statewide Planning And Research Cooperative System database of NYS. Patient records dated 2009-2012 were extracted and organized by ICD-9 procedure codes for RPN and OPN. Patient records were analyzed to compare hospital costs, length of stay (LOS) as well as other post-operative outcomes such as, risk of septicemia, deep-vein thrombosis (DVT), or pulmonary embolism (PE) within 90 days following the procedure.

During the observation period, the proportion of OPN performed decreased significantly from 64.8% in 2009 to 48.6% in 2012 (p<0.001) while the proportion of RPN increased significantly from 17.5% in 2009 to 35.9% in 2012 (p<0.001). Patients who underwent RPN had significantly shorter LOS (75th percentile=2.7 days) compared to OPN (75th percentile=4.7 days) and were also less likely to be readmitted with DVT while diagnosis of septicemia and PE were relatively similar for both OPN and RPN. Also of interest; RPN was associated with significantly higher hospital costs compared to OPN.

Between 2009-2012, RPN was increasingly used for treatment of malignant renal neoplasms in NYS. Patients records of RPN showed significantly shorter hospital stays and lower risk DVTs. However, RPN was associated with higher hospital costs compared to OPN.
Observing the Utilization Trends, Patient Traveling Patterns and Post-operative Outcomes for Open Versus Robot-assisted Radical Prostatectomy

Khawaja Hassan Bilal, MD; Mark Finkelstein; Michael A. Palese, MD

Icahn School of Medicine - Mount Sinai Health System - Dept. of Urology

Robot-assisted approach to radical prostatectomy has been rapidly gaining popularity in New York State (NYS) in recent years. We compared the utilization trends, traveling patterns and inpatient-outcomes of open radical prostatectomies (ORP) and minimally-invasive robot-assisted radical prostatectomies (RRP).

Using the Statewide Planning And Research Cooperative System database of NYS, 14,778 patient records dated 2009-2012 were extracted and organized by ICD-9 procedure codes for RRP and ORP. Patients were said to have traveled if they left their health service area (HSA) to undergo surgery at a different HSA. Inpatient outcomes were observed by comparing length of stay (LOS) and tracking readmission with the diagnosis of septicemia, deep-vein thrombosis (DVT), or pulmonary embolism (PE) within 90 days following the procedure.

Between 2009-2012, the proportion of ORP performed decreased from 27.7% in 2009 to 16.5% in 2012 (p<0.001) while the proportion of RRP increased significantly from 50.7% in 2009 to 69.8% in 2012 (p<0.001). Patient travel increased for RRP from 31.3% in 2009 to 46.1% in 2012 (p<0.005). Post-operative outcomes for RRP patients were; shorter LOS (75th percentile=1.4 days) compared to ORP (75th percentile=2.7 days) and relatively lower risk of being readmitted with DVT. The 90-day readmission rates of septicemia and PE were similar for both ORP and RRP.

A rapid adoption of RRP over ORP is observed in NYS, with improved outcomes for patients such as shorter LOS and lower risk of post-operative DVTs. Traveling patterns of patients undergoing RRP show a significant increase between 2009-2012.

Robotic Management of Ileocecal intussusception in an Adult

Jonathan Nguyen, DO; Roshin Thomas, DO; Roy Sandau, DO, FACOS

Rowan University

Introduction: While intussusception is relatively common in children, it is a rare entity in adults. Though traditionally treated with a laparotomy, there are many cases of intussusception successfully resected laparoscopically. With the advent of robotic surgery, several RALS right hemicolectomies have been successfully performed and documented. However, there are no case reports of robotic resection of adult intussusception.

Presentation: Our patient is an 87 year old female who presented with three days of right sided abdominal pain. Her physical exam revealed a palpable firmness in the RLQ with increased tenderness. A CT demonstrated an intussusception of her terminal ileum into her cecum.
Results: At the time of presentation, she appeared non-toxic, and a robotic right hemicolecction was performed. A RALS right hemicolecction was then performed with an extra-corporeal anastomosis in under 90 minutes. Because she was narcotic naive, Entereg was administered prior to surgery.

Conclusion: With the advent of robotic assisted laparoscopic surgery, the field of minimally invasive surgery has been revolutionized. A case series of 177 laparoscopic right hemicolecctions noted the average operative time to be 133 min, blood loss 94 ml, time to flatus 2.1 days, toleration of liquids 3.2 days, and average length of hospitalization 10.4 days. In comparison, our patient underwent a RAL right hemicolecction in 88 minutes, with minimal blood loss. Time to flatus, tolerating solids, and discharge were hospital days 2, 3 and 5, respectively. We have shown that a robotic assisted laparoscopic surgery is safe and effective alternative in the management of adult intussusception.

A Case of Peritoneal Tuberculosis Diagnosed with Laparoscopy

Takashi Yamada, MD, PhD1; Kimiaki Hattori1; Hidetoshi Satomi1; Yoshinobu Hirose1; Keisuke Ashihara2; Satoshi Tsunetoh2; Yoshito Terai2; Masahide Ohmichi2

1Department of Pathology, Osaka Medical College; 2Department of Obstetrics and Gynecology, Osaka Medical College

Introduction: Peritoneal tuberculosis is often misdiagnosed as peritoneal carcinomatosis preoperatively. We report a case of peritoneal tuberculosis diagnosed with laparoscopy.

Case: A 53-year-old, gravida 3, para 2, woman complained of abdominal distention of one month's duration. The serum levels of tumor markers were positive for CA125; 1181 U/ml and CA19-9; 202 U/ml. Magnetic resonance imaging (MRI) showed thickened peritoneum with large amounts of ascites, peritoneal carcinomatosis was suspected.

Laparoscopic surgery was performed. With the patient under general anesthesia and in the lithotomy position, an incision was made in the umbilicus, and a 12-mm port for camera was inserted. There were 1200 ml of ascites and diffuse nodular lesions along the surface of normal-sized ovaries, fallopian tubes, uterus, intestinal loops, omentum and peritoneum. Laparoscopic bilateral oophoro-salpingectomy and partial omentectomy was performed. The specimens in the bag were pulled out from the umbilicus. Intraoperative cytology of ascites was negative for malignancy, and intraoperative diagnosis of frozen section was suspicious of tuberculosis. In immunohistochemical findings, vimentin was positive, and AE1/AE3, CK7 and CK20 were negative. Ziehl-Neelsen staining showed no acid-fast bacilli. Final histological diagnosis was peritoneal tuberculosis.

Conclusions: Laparoscopy can be an effective approach for diagnosis of peritoneal tuberculosis.
Young Suk Kwon, MD; Nicholas Farber, MD; Parth Modi, MD; Izak Faiena, MD; Eric A. Singer, MD, MA, FACS; Sammy Elsamra, MD

Robert Wood Johnson Medical School

Objective: We describe our experience of robotic spiral flap dismembered pyeloplasty in a 77-old female with right UPJ obstruction associated with a long segment proximal ureteral stricture.

Methods and Procedures: A transperitoneal approach was performed. Flexible cystoscopy was performed to advance a guidewire to the distal end of the stricture. Greater than 2 cm of proximal ureteral stricture was noted. The entire stricture was spatulated and the ureter dismembered. A spiral flap pyeloplasty utilizing the redundant renal pelvis was identified as the ideal reconstructive approach to create a tension-free anastomosis. An inverted U-shape incision was made in the renal pelvis and was rotated inferiorly and tubularized to bridge the gap between the ureter and renal pelvis. A running suture with 4-0 vicryl was used to perform the anastomosis starting at the posterior aspect. An 8 Fr, 26 cm length double-J ureteral stent was placed into the renal pelvis and bladder. The remainder of the anterior anastomosis was then completed.

Results: The OR time was 3 hours and the EBL was 50 mL. The patient had an uneventful postoperative course and was discharged on POD #2, but developed UTI requiring hospitalization. Patient was treated with macrobid and a stent was exchanged for two Fr JJ stents. Stent was removed 4 weeks later. The patient remained asymptomatic, and follow-up diuretic renogram performed 11 weeks after surgery showed excellent excretion without significant obstruction.

Conclusion: Robotic spiral flap dismembered pyeloplasty may provide a feasible surgical option in patients with both a UPJ obstruction and a proximal ureteral stricture.
mesenteric artery and a 2 cm solid vascularized mass at the Ampulla of Vater. An endoscopic biopsy confirmed a malignant neoplasm.

Results: The procedure started with an extended adhesiolysis to properly expose the surgical area. A totally laparoscopic pancreaticoduodenectomy was performed without intraoperative complications. Two of the anastomosis were done intracorporeally and the gastrojejunostomy extracorporeally through a wound protector. The pathological diagnosis was an infiltrating moderately well differentiated adenocarcinoma. Patient resumed diet at postoperative day three and had a satisfactory postoperative course been discharge ten days after the procedure.

Conclusion: Total laparoscopic pancreaticoduodenectomy is feasible even for complex cases with history of previous abdominal surgeries and anatomical variations. An expert surgeon with advanced laparoscopic skills ensures favorable outcomes.

270GYN

Twelve-year Experience of Laparoscopic Para-aortic Lymphadenectomy

Joong Sub Choi, MD, PhD; Jaeman Bae, MD, PhD; Won Moo Lee, MD, PhD; Un Suk Jung, MD, PhD; Jeong Min Eom. MD; A Ra Koh, MD

Hanyang University College of Medicine

Objective: To evaluate the feasibility, efficacy, and standard surgical boundary of laparoscopic para-aortic lymphadenectomy (LPAL) to the level of the left renal vein for patients with gynecologic malignancies.

Methods: We conducted a retrospective chart review of 319 patients with gynecologic malignancies who had undergone LPAL by a single surgical team between November 2003 and October 2014. We evaluated demographic characteristics, surgical outcomes, and, lymphadenectomy-related complications.

Results: Three hundreds twelve patients underwent LPAL as part of their staging, restaging, or debulking surgery. Seven patients with isolated para-aortic lymph node recurrence underwent a repeat LPAL. The median age and BMI of the patients were 54 years (range 28–81 years) and 26.0 kg/m2 (range 20.3–37.2 kg/m2), respectively. The median operating time was 60 min (range 24–135 min), and the median number of harvested para-aortic lymph nodes were 12 (range 1–41). There were seven cases of intraoperative complications: five cases of major vessel injuries (three inferior vena cava injuries, one aorta, and one common iliac vein), a cisterna chyli rupture, and one case of ureteric injury. There were four postoperative complications: two lymphocysts and two cases of chylous ascites. There were two conversions to laparotomy: one to repair of left common iliac vein laceration and the other to remove an enlarged para-aortic lymph node completely.

Conclusions: It is feasible, efficient, and effective to perform LPAL to the left renal vein level for women with gynecologic malignancies by well-trained gynecologic oncologic surgeons and standard surgical boundary.
**Novel Robotic Assisted Laparoscopic Repair of Hand-Assist Site Incisional Hernia following Hand-Assisted Laparoscopic Nephrectomy**

Koby Herman, BS; Gainosuke Sugiyama, MD, FACS; David Radvinsky, MD; Michael Kennedy, MD; Paul Chung, MD

SUNY Downstate Medical Center

Objective: The incidence of incisional hernias following hand-assisted laparoscopic surgery (HALS) has been reported in the literature to be 3-10%. Laparoscopic repair of such defects can be challenging due to the nearly pelvic location of these hernias. We encountered an incisional hernia secondary to a hand-assisted laparoscopic nephrectomy (HALN). We report the first case of a robotic-assisted repair for an incisional hernia following a HALN.

Methods and Procedures: Using the robotic platform, extensive adhesiolysis, with dissection and reduction of the hernia contents, was performed. The edges of the internal oblique muscles were dissected out on either side of the hernia defect and closed primarily with a running suture. A plane anterior to the transversalis fascia was dissected, and an 11x11 cm polypropylene mesh was placed over the defect closure and secured with a running suture.

Results: The patient was a 50-year-old man with a history of HALN due to complications related to recurrent nephrolithiasis. He underwent an elective robotic-assisted laparoscopic ventral hernia repair using polypropylene mesh. Two centimeters of coverage circumferentially from the edge of the mesh was ensured. There was no need for conversion to an open procedure and the operation went without complication.

Conclusions: We present the first case report of a robotic-assisted laparoscopic repair of an incisional hernia following HALN. Robotic-assisted laparoscopic repair of HALN is feasible and is a valuable addition to the minimally invasive surgeon's armamentarium. However prospective studies comparing the robotic-assisted approach to established techniques are warranted.

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**Laparoscopic Evaluation and Excision of Parasitic Myoma**

Nkiruka Chuba, MD; Jillian Main, MD1; Lindsey Grace, MD21Santa Clara Valley Medical Center; 2Stanford Medical Center

Objective: Parasitic myomas are uncommon and thought to result from the seeding of fibroid fragments into the peritoneum, most commonly seen after laparoscopic myomectomy, laparoscopic hysterectomy or use of morcellation. Limited literature exists on their incidence or prevalence following abdominal approach in absence of morcellation. We present the case of a 48 y.o woman with pelvic pain 20 years following open myomectomy and hysterectomy, without prior history of morcellation. We aim to highlight the diagnosis and complex laparoscopic evaluation, excision and removal of a symptomatic parasitic myoma.

Methods & Procedures: A combination of both blunt and sharp dissection as well as ureterolysis was used to excise an isolated pelvic mass.
Results: Laparoscopic excision and removal of pathology confirmed parasitic myoma.

Conclusion: This video showcases the evaluation and laparoscopic excision of a symptomatic parasitic myoma after abdominal myomectomy and hysterectomy without prior use of morcellation.

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Progression from IPOM to TAPP Ventral Hernia Repair: Lessons Learned

Brendan Chen, BA; Kaylene Barrera, MD; David Radvinsky, MD’ Paul Chung, MD; Antonio Alfonso, MD FACS; Gainosuke Sugiyama, MD FACS

State University of New York Downstate

Laparoscopic ventral hernia repair has been increasingly recognized for its advantages in post-operative outcomes. Recently, there has been growing evidence favoring a transabdominal preperitoneal approach. The technical hurdles associated with this operation have been alleviated with the addition of robotic assisted laparoscopy. Here we report our experience with robotic TAPP ventral hernia repair to evaluate its feasibility and comparisons to robotic IPOM repair.

Retrospective review of patients who underwent robotic assisted ventral hernia repair over a 21 month period was performed. Demographics, defect size, operative time, post-operative pain, and discharge time from procedure were measured. Post-operative pain requirements were converted to morphine equivalents and standardized using BSA to determine a morphine index. Mann-Whitney U and T Test were used to determine statistical significance. Thirty-eight patients were identified of which 22 (58%) underwent IPOM repair while 16 (42%) underwent TAPP repair. Age, BMI, gender, and mesh size were comparable. Mean operative time for IPOM was 155 minutes versus 188 minutes (p=NS) for TAPP. Median pain score (0-10) was 2.5 versus 5.5 (p=NS) for IPOM and TAPP, respectively. Patients who underwent IPOM required a mean of 3.71 mg/m2 morphine versus 4.83 mg/m2 (p=NS) who underwent TAPP.

In this retrospective study of patients who underwent robotic ventral hernia repair, there was no significant difference in operative time or post-operative pain between IPOM versus TAPP techniques. Robotic assisted TAPP ventral hernia repair is a feasible therapeutic option. Continued long term investigations are warranted.

277GS

Laparoscopic Robot Assisted Total Proctocolectomy with a Single Docking: First Report in Mexico

Rodrigo Ortiz Wong MD1; Eduardo Jafet Ruiz Suarez, MD1; Jorge Blanco Figueroa1; Roberto Gonzalez Santamaria1; Omar Fernando Wong Rodriguez2

1Hospital Alta Especialidad de Zumpango; 2Centro Medico Nacional del Noreste

Objective: Ulcerative colitis (UC) is a chronic disease that affects the colon and rectum mucosa, and it depends of the interaction of genetics and environmental factors, it is principal observed in developed countries. The
etiology is unknown, the medical treatment induced periods of remission and exacerbations of colitis, associated with abdominal pain, diarrhea and rectal bleeding and the local and systemic side effects of a long term of medical therapy, so the surgical treatment represent a cure for these disease.

Methods and Procedure: A 24 years old male with histopathology diagnosis for ulcerative colitis without remission of the symptoms to the medical treatment was received to perform a laparoscopic robot assisted total proctocolectomy. We began the procedure with a 12mm trocar for camera in epigastrium, two 8mm trocars in middle axilar line for robotic instruments, two 5mm and a 10mm trocar suprapubic for assistant, A right flank incision was performed to extract the specimen and to carry out a temporary terminal ileostomy.

Results: The total mean time of surgery was 360min, console time was 240min, Docking was 5min, with a mean blood loss of 150ml, the patient initiate oral intake in the next 24 hours and was discharged with no complications.

Conclusion: We successfully performed the first laparoscopic robot assisted total proctocolectomy with a single docking position in Mexico. Minimal invasive surgery has allowed us to perform more complicated procedures as experience is gained. The robotic system allows us to perform these kinds of surgeries in a safe way and with few complications.

278GS

Does Suturing Lead to Less Post Operative Pain in Ventral Hernia Repair?

Kaylene Barrera MD; Brendan Chen, MD; Paul Chung, MD; Yohannes Constable, BS; Sarah Ullrich, BS; Antonio Alfonso, MD; Gainosuke Sugiyama, MD

State University of New York Downstate Medical Center

Background: Laparoscopic ventral hernia repair offers improved patient outcomes and cost benefits. With this modality, transfascial sutures and tacking for mesh fixation has been linked to increased postoperative pain. In contrast, robotic-assisted laparoscopy allows for fixation by continuous suture, which has anecdotally been associated with decreased pain. We sought to identify a difference in postoperative pain between tack and suture fixed mesh.

Methods and Procedures: We conducted a retrospective review of patients who underwent minimally invasive ventral hernia repair over 22 months. Repairs using hybrid or preperitoneal techniques were excluded. Demographics, operative time, method of fixation, and post-operative pain were analyzed. Opiate requirements were converted to morphine equivalents and normalized by body surface area.

Results: 73 patients underwent minimally invasive ventral hernia repair. Of those, 39 were repaired using IPOM technique. Twenty-three (59%) of patients were repaired with tacks and 16 (41%) with sutures under robotic assistance. There were no statistical differences between BMI, age, or sex. The suture group mean OR was 165 min compared to 88 min in the tack group (p=<0.001). Median pain score (0-10) was 2.0 versus 2.5 for tacking and suturing methods respectively (p=NS). Patients that underwent tacking required a mean of 3.36 mg/m2 versus 3.92 mg/m2 in suture group (p=NS).
Conclusions: Minimally invasive ventral repair can be achieved with both tacking and continuous suture fixation of mesh with low post-operative pain scores and opiate requirements. Further studies may identify factors leading to patient discomfort, or demonstrate cost superiority.

279GS

**Progression from IPOM to TAPP Ventral Hernia Repair**

Brendan Chen, BA; Kaylene Barrera, MD; David Radvinsky, MD; Paul Chung, MD; Antonio Alfonso, MD FACS; Gainosuke Sugiyama, MD FACS:

State University of New York Downstate

Background and Objectives: Laparoscopic ventral hernia repair has been increasingly recognized for its advantages in post-operative outcomes. Recently, there has been growing evidence favoring a transabdominal preperitoneal approach. The technical hurdles associated with this operation have been alleviated with the addition of robotic assisted laparoscopy, Here we report our experience with robotic TAPP ventral hernia repair to evaluate its feasibility and comparisons to robotic IPOM repair.

Methods and Procedures: Retrospective review of patients who underwent robotic assisted ventral hernia repair over a 21 month period was performed. Demographics, defect size, operative time, post-operative pain, and discharge time from procedure were measured. Post-operative pain requirements were converted to morphine equivalents and standardized using BSA to determine a morphine index. Mann-Whitney U and T Test were used to determine statistical significance.

Results: Thirty-eight patients were identified of which 22 (58%) underwent IPOM repair while 16 (42%) underwent TAPP repair. Age, BMI, gender, and mesh size were comparable. Mean operative time for IPOM was 155 minutes versus 188 minutes (p=NS) for TAPP. Median pain score (0-10) was 2.5 versus 5.5 (p=NS) for IPOM and TAPP, respectively. Patients who underwent IPOM required a mean of 3.71 mg/m2 morphine versus 4.83 mg/m2 (p=NS) who underwent TAPP.

Conclusions: In this retrospective study of patients who underwent robotic ventral hernia repair, there was no significant difference in operative time or post-operative pain between IPOM versus TAPP techniques. Robotic assisted TAPP ventral hernia repair is a feasible therapeutic option. Continued long term investigations are warranted.

281GS

**555 Technique” for TEP repair of Ingiunal Hernia – A Feasible Option**

Manish Kumar Gupta, DNB; Rathindra Sarangi, MS

Sir Ganga Ram Hospital, Delhi
Introduction: We all have dependence over 12mm Hasson trocar to create pre-peritoneal space & mesh insertion in TEP repair. Hasson trocar leads to a big defect in the anterior rectus sheath and a large wound. Dependence and necessity of having a costly Hasson trocar exclusively for TEP repair reflected in surgical cost.

We have devised an innovative surgical technique to create pre-peritoneal space and insertion of mesh through 5 mm port without any difficulty. Our technique avoids the use of costly Hasson trocar which is now exclusively used for TEP repair of inguinal hernia.

Material and Methods: From 21st Oct 2014 to 1st Feb 2016, we have done 54 consecutive TEP repair with our new “555 Technique”. An innovative infra-umbilical 5mm port made to create pre-peritoneal space. Other two 5mm working ports were used for dissection and mesh placement.

Results: Out of 54 cases, 22 were indirect inguinal hernia (18 unilateral, 4 bilateral), 32 direct inguinal hernia (21 unilateral, 11 bilateral). 4 unilateral indirect inguinal hernia patients had past history of contra-lateral repair & 6 unilateral indirect inguinal hernias were irreducible. All 54 cases were successfully completed with our “555 technique” with no co-morbidities or recurrence. The average total duration of creating the pre-peritoneal space is less than the conventional Hasson’s trocar placement.

Conclusion: 555 Technique is a feasible approach for Inguinal Hernia repair without using Hassson trocar.

282PED

Laparoscopic Management of Abdominoscrotal Hydrocele

Kathleen Cannon, MD; Jason Brill, MD; Romeo Ignacio, MD

Naval Medical Center San Diego

Objective: Abdominoscrotal hydrocele is encountered in less than 3% of pediatric hydroceles. Management options include scrotal and inguinal approaches. Laparoscopic approaches have been reported but are mainly utilized for diagnostic purposes. We report a case of abdominoscrotal hydrocele managed via a combined inguinal and laparoscopic approach.

Methods: A 4 month-old male was referred with bilateral hydroceles. An ultrasound was obtained preoperatively, showing simple-appearing hydroceles. The procedure was begun with a right hydrocelectomy performed in the usual fashion. The left hydrocele was initially approached in the same inguinal fashion, at which point the sac was found to communicate with the abdominal space. A laparoscope was inserted peri-umbilically to visualize the extent of the suspected abdominoscrotal hydrocele. Maryland graspers and monopolar laparoscopic scissors were inserted via stab incisions and the dissection of the abdominal portion of the sac was completed laparoscopically. The sac was removed. The inguinal floor was repaired with a modified Bassini repair.

Results: Current consensus on management of abdominoscrotal hydrocele suggests only that the entire sac must be excised. Inguinal and scrotal approaches both have advocates. Available case series document 147 cases of abdominoscrotal hydrocele in 117 patients, most of which have been managed via inguinal incisions. Laparoscopy has been employed for visualization or marsupialization of the sac, but no cases have been reported to date describing a laparoscopic excision.
Conclusion: Laparoscopic dissection provides an alternative approach to this rare diagnosis. Surgeons should remain aware of abdominoscrotal hydrocele and the multiple operative options that exist.

283URO

Laparoscopic Repair of Ileal Conduit Parastomal Hernia Using the Modified Sugarbaker Technique

Dario Garcia-Rojo MD1,2; Xavier Serra, MD2; Raul Martos, MD2; Leticia De Verdonces, MD2; Jesus Muñoz, MD2; Marta Capdevila, MD2; Angel Prera, MD2; Juan Prats2

1Hospital Sabadell. 2Universitat Autonoma Barcelona

Objectives: Parastomal hernia is a common complication of stoma formation. The incidence for ileal conduits ranges from 2% to 40%. Modified laparoscopy Sugarbaker technique is a possible method to repair ileal conduit parastomal hernia.

Methods & Procedures: We present a case of the laparoscopic modified Sugarbaker technique applied to repair a ileal conduit parastomal hernia in a 67 years-old patient with a history of radical cystoprostatectomy and Bricker uretero-ileostomy for a bladder cancer seven years ago.

RESULTS: The patient was positioned supine. The abdomen was accessed using a 10-mm trocar in the axillary line, in front of the ileostomy, a 10-mm trocar by subxiphoid approach and a 5-mm trocar in the left lower quadrant. Liberation of omental adhesions in the foramen of parastomal hernia and extraction of 40 cm. of small bowel located in parastomal hernia were performed. The parastomal hernia defect were identified and measured. We used a 15 cm x 20 cm flexible composite mesh. The fine filament design and its macroporous structure flexible, facilitate the scar tissue formation and adaptation to the abdominal wall. Several takers are placed in the abdominal wall, circumferentially around the ileal loop using a 5-mm tacking device. The patient was discharged after a 2-day stay. After 20 months of follow up, the patient is free of recurrence of parastomal hernia.

Conclusions: The introduction of prosthetic meshes significantly decreases the recurrence rates of parastomal hernia. Laparoscopic surgery reduces postoperative pain, recovery time and minimize many of the morbidities associated with open procedures.

285GYN

A Comparison of Robot Assisted Laparoscopic Myomectomy (RALM) with Laparoscopic Assisted Myomectomy (LAM)

Rooma Sinha MD; Madhumathi Sanjay, MD; Rupa Bana, MD Apollo Hospital, Hyderabad, India

Objective: To compare surgical outcome between Robot-Assisted Laparoscopic Myomectomy with Laparoscopic-Assisted Myomectomy
Material & Methods: Retrospective cohort study at tertiary care hospital from January 2013 to December 2014. Demographic data, number and weight of fibroids removed, surgical time, hemoglobin drop, requirement of analgesia and postoperative stay was recorded.

Results: 76 patients, 40 in robotic and 36 in laparoscopy group were analysed. The mean age (33.9y, 32.2y), BMI (24.6, 25.0) and co-morbidities were similar in both groups. Dysmenorrhea was commoner in robotic arm (9/40 versus 1/36, p=0.03). The average number of fibroids removed in robotic arm was higher (2.3 versus 1.3, p=0.01) but the average weight of fibroids removed was similar (399±679g versus 688±1115g). These differences persisted despite re-analysis after excluding the outliers necessitated by a few extreme values. There was no difference in the mean operating time, blood loss and need for transfusion. Robotic group had significantly lesser requirement of intravenous analgesic (61 hours versus 33 hours) and a shorter hospital stay (1.8 days versus 2.8 days).

Conclusion: Robotic assistance offers comparable surgical outcomes while significantly reducing intravenous analgesic requirements and hospital stay. The number of fibroids removed in robotic arm is higher, suggesting that this approach might be more useful in patients with multiple fibroids. The operating time is similar (time needed for docking and morcellation was excluded in robotic group) as these are the function of the experience the surgical team. The major limitations are that this study is retrospective, non-random and open label.

Mathematical and Experimental Modeling of Blood Flow in Microcirculation During Tumor Angiogenesis and Other Surgical Conditions: Part II - Virtual Computational Analysis

Ospan A. Mynbaev MD PhD1,2; Nina O. Gorodnova1,2; Andrey V. Kolobov2,3; Xenia I. Roubliova1; Sergei S. Simakov1,21Moscow Institute of Physics and Technology (Stat University); 2The Institute of Numerical Mathematics of the Russian Academy of Sciences, Moscow, Russia; 3P.N.Lebedev Physical Institute of the Russian Academy of Sciences

Background: Glucose and O2 are considered to be the key metabolites of normal and tumor cells (TCs) functioning. TCs are hypoxic, due to their fast growing behavior and they exhibit high consumption rate of nutrients with involving key molecule in the angiogenesis. As a result, the density of the surrounding microvessel network (MVN) is increased, which means a raised permeability for blood flow (BF) and associated with increased O2 and glucose transport. Quantification of these alterations is still underestimated. We propose a computational method of the MVN structural prototype generation for microcirculation of normal and tumor angiogenesis (TA).

Methods/Results: Mathematical model (MM) and virtual computational analysis (VCA) of BF in MVN is presented. BF in the MVN in normal conditions and during TA was estimated. The structure of the normal MVN is randomly generated. Length and diameter of the capillaries are assigned on the basis of micro-CT scan data. The directed-force-algorithm is applied to set up adequate space-arrangement. BF in MVN is simulated basing on the mass balance and Poiseuille pressure drop conditions for every microvessel. Blood rheology is included as nonlinear-dependency of hydraulic resistance from the hematocrit and BF. The MM is validated by uniform relative blood perfusion test in normal conditions. BF alteration in MVN modified by TA, according to the VEGF concentration, was analyzed. VEGF space-distribution profiles are simulated by the model of tumor growth.
In conclusion, MM and VCA of BF in microcirculation during TA can be a useful tool for assessment of antiangiogenic agents efficiency and for treatment-planning.

289GYN

The Prevention and Treatment of Complications of Laparoscopic Surgery

Xuemei Jia MD PhD

Affiliated Hospital of Nanjing Medical University

Laparoscopy is typically associated with a few complications. Of these, organ injury caused by puncture or by electrosurgery tools is the most common major complication. If this occurs or if surgery is hindered by bleeding or adhesions, conversion to laparotomy may be necessary. Overall, this conversion risk is low and approximates 5 percent.

In addition to organ damage, nerve or vascular injury also may result. Because patients are placed during some procedures for extended periods in the dorsal lithotomy position with arms abducted, injury to the common peroneal, femoral, and ulnar nerves and to the brachial plexus is possible. Rarely, air embolism from gas insufflation following vessel puncture may occur. Minor complications may include wound infection or hematoma, peritoneal irritation from retained intra-abdominal gas, subcutaneous emphysema, and vulvar edema.

In contrast to these short-term problems, complications also may develop long after the surgery. Fortunately, incisional hernia formation following laparoscopy is infrequent, and trocar-site metastases develop uncommonly following cases in which malignancy is diagnosed. Puncture injuries, bowel injury, vascular injury, urinary tract injury, thermal injury, and incisional hernias are also important complications of laparoscopy.

290GYN

Prevention and Treatment of Hysteroscopic Complications

Sumin Wang

Gynecology Department, Nanjing Maternity and Child Health Hospital Affiliated Hospital of Nanjing Medical University

Objective: To improve the safety of hysteroscopic operation.

Methods & Procedures: Through literature retrieval and survey, summarizing the cause, clinical feature, management and prevention of hysteroscopic complications by words, pictures and videos.

Results: Uterus perforation is one of the most common and serious hysteroscopic complications. Observations, promoting uterine contraction therapy or surgical repair are needed according to different types of perforation to avoiding serious consequences. Transurethral resection of prostate (TURP) syndrome with the clinical manifestations of water intoxication, of which early diagnosis and treatment are very
important, reducing the absorption of perfusion fluid is the key to prevent TURP syndrome. To reduce the incidence of enigmatic air embolism is still worth exploring. Bleeding and infection are common in the hysteroscopic surgery, effective hemostasis and the rational applications of antibiotics are very necessary.

Conclusion: Most hysteroscopic complications are rare, serious and fatal. Timely and correctly treating could lead to better prognosis. We need to enhance awareness and improve hysteroscopic operation skills by more enough hysteroscopy examination, formal training and learning experiences to avoid the occurrence of complications.

291GS

The Efficacy Analysis of Oral Administration of Olive Oil in Preventing Chylothorax Caused by Esophageal Cancer Endoscopic Surgery

Xiuyi Yu, MD; Jiangjie, MD
The First Hospital Affiliated to Xiamen University

Preoperative oral administration of olive oil and intraoperative exposure of thoracic duct during endoscopic esophagectomy for esophageal cancer.

Methods: From June 2013 to June 2015, retrospectively analysed 136 patients in the Department of Thoracic Surgery in the First Hospital Affiliated to Xiamen University who were treated with 100ml olive oil 12h before surgery. Then the exposure of the thoracic duct was observed.

Results: All patients were successfully operated. There was no transfer to open chest. Thoracic duct was plentiful, transparent, milky white and clearly exposed during the operation. 131 patients were successfully retained the thoracic duct. 5 cases of thoracic duct were injured when separating thoracic duct due to tumor invasion, and then clamped by titanium in the operation. All the patients were lien chest tube drainage postoperatively, extubated 3 ~ 5d later; postoperative 24 hours drainage volume was 150±35ml, postoperative total drainage volume was 500±130ml; no postoperative chylothorax occurred; postoperative hospitalization time was 9±2d.

Conclusion: Preoperative oral administration of olive oil for esophageal cancer endoscopic surgery was simple, safe, effective and no injury. The thoracic duct was clearly exposed during the operation. The injury of the thoracic duct reduced. Thoracic duct was preserved intact. Normal glucose and lipid metabolism was retained. It is accordant with the physiological functions of the human body. It is a good choice of preparation before the operation of esophageal cancer and worth spreading.

292GS

Comparative Study of Video-assisted 3D Thoracoscopic Esophagectomy Versus 2D for Esophageal Carcinoma

Xiuyi Yu, MD; Jiangjie MD
The First Hospital Affiliated to Xiamen University
The objective of this paper is to study the advantages and disadvantages of 3D and 2D thoracoscopic esophagectomy for esophageal carcinoma.

Method: Esophageal carcinoma cases from July 2013 to May 2015 in the Department of Thoracic Surgery of the First Affiliated Hospital of Xiamen University were analysed retrospectively. They were divided into 53 cases of 3D-VATS group (observation group) and 37 cases of 2D-VATS group (control group) depending on the mode of Video-Assisted Thoracoscopic, the operation time, amount of bleeding, the number of lymph node dissection, postoperative 24 hours drainage volume, total volume of drainage, closed thoracic drainage tube with time and postoperative complications were compared between the two groups.

Result: The operation time of 3D-VATS group was shorter than that in 2D-VATS group [(63.35±3.31) min vs. (71.67±5.10) min, P<0.05]. The amount of bleeding in 3D-VATS group was less than that in 2D-VATS group [(53.11±5.47) ml vs. (66.89±9.37) ml, P<0.05]. The number of lymph node dissection in 3D-VATS group was larger than that in 2D-VATS group [(14.75±2.90) vs. (13.13±2.01), P<0.05]. The chest tube time in 3D-VATS group was slightly less than that in 2D-VATS group [(4.73±0.60) d vs. (5.11±1.40) d, P>0.05]. The postoperative complications in two groups has no obvious difference (P>0.05).

Conclusion: The video-assisted thoracoscopic of thoracic esophagectomy under 3D mode have a certain advantage than 2D mode on the operation time, the amount of bleeding and the number of lymph node dissection. There were no obvious difference between the two groups in 24 hours drainage volume, total volume of the drain, chest tube time and postoperative complications.

293GS

Clinical Analysis of the Treatment of Mediastinal Tumor Using Video-assisted Thoracoscopic Surgery Under 3D Mode

Guojun Geng, MD; Jie Jiang, MD; Xiuyi Yu, MD

The First Hospital Affiliated to Xiamen University

Objective: To discuss the safety and efficacy of the treatment of mediastinal tumor using VATS under 3D mode.

Methods: Data were collected from patients with mediastinal tumor from July 2013 to July 2015 in the Department of Thoracic Surgery of the First Affiliated Hospital of Xiamen University. 62 cases of mediastinal tumor patients were retrospectively analyzed. Using 3D-VATS operation mode, observation hole and the operation hole was designed according to the preoperative CT location of tumor. According to the situation in the operation, the observation hole and the operation hole can be exchanged. If the tumor is large, close to the big blood vessel, or with surrounding adhesion not easy to expose, VAMT can be used.

Results: 58 cases were operated using VATS. 3 cases with 6cm diameter of tumor were operated using VAMT. 1 case with tumor invasion of the left innominate vein transit thoracic surgery. 2 cases of phrenic nerve injury caused diaphragmatic elevation, postoperative recovered in March. 2 cases of atelectasis were improved after anti-inflammatory, atomization and expectoration. No death case occurred within 30 days after operation and during the operation. 62 cases were followed up for 1-24 months, the median follow-up time was 12 months. All of the benign tumors had no recurrence, and 1 cases of thymic carcinoma recurred.
Conclusion: The VATS treatment of mediastinal tumor under 3D mode is a new choice, and the clinical effect is safe and feasible, and it is worth spreading and applying.

294GYN

First Retrospective Hospital-Based Study of Correlation Between Patient Age and Longer Surgical Time in Women with Laparoscopic Hysterectomy

Karina Leyva, MD1; Homero Flores, MD1; David Basurto, MD1; Carlos Hernandez, MD1; Luis Fernando García, MD1, 2, 3

1Programa Multicéntrico de Residencias Médicas, Tecnológico de Monterrey; 2Instituto de la Mujer, TECSalud del Sistema Tecnológico de Monterrey; 3Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado de Nuevo León

Objective: The main objective of this study is to determine if a correlation exists between patient age and surgical time in women undergoing laparoscopic hysterectomies.

Methods & Procedures: A retrospective analysis of 229 patients who underwent laparoscopic hysterectomy between 2007 and 2015 in two hospitals belonging to the TECSalud Healthcare System in Northeastern Mexico was performed. Variables were expressed as means and standard deviations upon following a normal distribution by Anderson-Darling’s normality test. Means, standard deviation and confidence intervals were calculated, and Pearson’s correlation test was used to calculate correlations between variables in question.

Results: Mean population characteristics were as follows: age 44 years (SD 0.52; CI 44.11-45.83), surgical time 146.3 min (SD 2.98; CI 141.37-151.23), BMI 27 (SD 0.41), uterine weight 169.27 grams (SD 7.07; 157.6-180.94) and transoperative bleeding 191 ml (SD 13.76; CI 168.07-213.5). Pearson’s correlation test suggested a positive correlation between age and surgical time (R²= 0.97 p=0.0013).

Conclusion: Based on the data analyzed, evidence suggests a statistically significant positive correlation exists between patient age and surgical time in women undergoing laparoscopic hysterectomy. Although surgical time is highly dependent on surgeon skill and particularly the surgeon’s own learning curve, and the benefits of minimally invasive surgery to women undergoing the procedure has long been proven, an increment in surgical times and it’s logistical and economical implications must be weighted-in at surgical planning in laparoscopic hysterectomies.

295MUL

Skill Degradation and Recovery Following an Advanced Laparoscopic Skills and Suturing Course

Katherine Mia Choi, BS1; James Rosser Jr., MD, FACS2; Jeffery Fleming1; Tim Lagare1; Jamie Nakagiri1

1UCF College of Medicine; 2Florida Hospital
Objective: To determine the level of skill degradation and time for recovery after prolonged intervals remotely removed from a Top Gun Advanced Laparoscopic Skill and Suturing Program.

Methods: Six medical students without prior laparoscopic surgery experience completed the Top Gun Laparoscopic Skills and Suturing Program. The same participants returned to complete the same program 10 days and 6.5 months after the initial experience with no practice between events. The program consisted of ten timed trials of three laparoscopic subtasks and ten suturing trials. Their Top Gun Score was comprised of total time to complete all tasks minus error penalties.

Results: Significant improvements were seen in overall scores from the initial program (5411.0s±2365.4) to 10 days (3178.2s±579.5; p=0.015), and to 6.5 months (2869.9s±653.0; p=0.021). Recovery of previous performance was established within the first two trials of each task. The initial program’s average, the recovery trials of second event, and the third event for each task are: Cobra Rope (68.4s), event 2 (66.6s), event 3 (50.8s); Pea Drop (110.7s/ 95.2s/ 56.68s); Triangle Transfer (110.8s/ 62.9s/ 59.4s); Suturing (230.5s/222.1s/ 135.0s).

Conclusion: The Top Gun Laparoscopic Skill and Suturing program is not only able to efficiently establish laparoscopic skill and suturing performance but this study suggests its pedagogy can immunize participants against skill degradation after long periods without practice. Furthermore, recovery of skill sets is significantly accelerated.

296GS

Consecutive 101 Cases

Shu-Hung Chuang. MD PhD

IRCAD-AITS Show Chwan Health Care System, Changhua, Taiwan; Division of General Surgery, Department of Surgery, Changhua Show Chwan Memorial Hospital, Changhua, Taiwan

Objective: To present our 42-month experience of single-incision laparoscopic common bile duct exploration (SILCBDE)

Methods and Procedures: One hundred one consecutive patients underwent SILCBDE by a single surgeon with conventional straight laparoscopic instruments in a period of 42 months. Concomitant cholecystectomies were performed except one case.

Results: Choledochotomy was performed in 61 patients (60.4 %). For patients underwent transcystic or transfistulous choledochoscopic bile duct explorations via longitudinal cystic ductotomy, the successful proximal exploration rate was 63.3 % (19/30). The overall ductal clearance rate was 100%.

Eighteen procedures (17.8 %) were converted including only one open surgery. Nineteen patients (18.8 %) experienced 26 episodes of complications, and the majority (19 episodes) is classified as Clavien-Dindo grade I. The multivariate logistic regressions showed older age and higher BMI were associated with a higher procedure conversion rate and higher modified APACHE II score, higher white blood cell count, longer operative time, and Mirizzi syndrome type II (McSherry classification) were the independent risk factors for complication.
Based on the operative time, accomplishing 20 successful SILCBDE was needed to pass through the learning curve. Compared with the learning phase, a higher transcystic/transfistulous approach rate (50.0 % vs. 8.0 %; p < 0.001) and a shorter operative time (209.0 ± 62.7 vs. 263.0 ± 67.5 min; p < 0.001) were observed in the experienced phase.

Conclusion: SILCBDE with conventional straight instruments can be performed for most cases of choledocholithiasis safely and efficaciously. The complication rate is acceptable and the majority is minor.

120GS

The Stomach, Intestinal and Pylorus Sparing (SIPS) Procedure; A Single Center Analysis of Our First 100 Patients

Paul E. Enochs MD

Background: The sleeve gastrectomy with single anastomosis duodenal-intestinal bypass procedure has been gaining popularity since first described by Dr. Torres several years ago. It has gone by many names most notably the Stomach Intestinal and Pylorus Sparing surgery (SIPS). However, there are few studies describing the results of these procedures.

Methods: Using internal practice database and electronic medical records, clinical data was obtained for our initial set of 100 Patients who underwent the SIPS procedure and compared with the data of those who underwent a laparoscopic sleeve gastrectomy (SG) and laparoscopic roux-en-y gastric bypass (RYGBP). Main outcomes were weight loss and 30 day risk adjusted serious morbidity and mortality.

Results: We analyzed our first 100 patients who underwent a SIPS procedure and compared them to similar patients who underwent a laparoscopic sleeve gastrectomy (SG) and laparoscopic roux-en-y gastric bypass (RYGBP). The EWL at one year is greater with a SIPS procedure while the risk profile for SIPS, although slightly more than a sleeve gastrectomy (SG), is less than that of a roux-en-y gastric bypass (RYGBP). At six months there have been no appreciable metabolic or nutritional deficiencies compared to SG or RYGBP.

Conclusion: The use of Laparoscopic SIPS procedures have been increasing on a national level. Compared with our other bariatric procedures, the SIPS procedure is associated with a lower risk profile, an equivalent nutritional status, and increased weight loss. Further studies will help to definitively define the role of this promising new procedure and how it plays within our bariatric armamentarium.

129PED

Minimally Invasive Video Assisted Total Thyroidectomy for Follicular Neoplasm, Initial Experience

Ana I Vargas, MD1; Joel Cazares, MD2; Jorge Osorio-de Dios, MD2; Jorge Cantú-Reyes, MD2; Leonor Hinojosa-Amaya, MD2; Héctor F. Sánchez-Maldonado, MD2

1ITESM-SSNL; 2Hospital Regional de Alta Especialidad Materno Infantil, Servicios de Salud de Nuevo León, Monterrey, México

Objective: Case report describing minimally invasive video-assisted thyroidectomy (MIVAT) procedure in children.
Methods & Procedures: A 14-year-old girl with an asymptomatic thyroid mass was referred. Ultrasound (US) demonstrated a thyroid nodule (TN) of 2x2cm, confirmed by computed tomography. Thyroid function test were normal. Fine-needle aspiration (FNA) revealed follicular neoplasm (Class 4 Bethesda) carrying 15-30% risk of malignancy. A total thyroidectomy was performed by MIVAT approach. The 5-mm, 30o laparoscope provided excellent visualization of key vascular structures, superior laryngeal nerve, recurrent laryngeal nerve, and parathyroid glands were identified. Operative time was 150 minutes, no drainage was needed. Postoperative course was uneventful, patient is now under levothyroxin treatment.

Results: TN’s occur less frequently in children and adolescents, having increased malignancy potential than in adults; hence, the importance to exclude it in newly diagnosed nodules. Most patients with TN’s are asymptomatic and discovered incidentally. A careful physical examination is mandatory; US is the most sensitive test available. The US criteria for FNA biopsy are: hypoechogenicity, microcalcifications, irregular margins, intranodular vascular images. Thyroidectomy has been the procedure of choice, however; MIVAT, a challenging procedure documented in the adult population is underreported in pediatric patients.

Conclusion: MIVAT approach is safe and effective in the management of TN’s in children, it offers excellent cosmetic results and reduces postoperative pain. Inclusion criteria are: thyroid estimated volume less than 30 mL, nodule less than 35 mm, absence of enlarged lymph nodes, absence of thyroiditis and previous thyroid surgery. To our knowledge, this is the first case reported in Latin-America.

135GS

**Fulminant Clostridium Difficile Colitis: Early Laparoscopic Assessment/Management**

Eric D. Rideman, DO; Jeremy Wong, BHSc, RRT; Wajid I. Khan, BSc; Salam Zayona, BSc; Rahim Haji, DC, MSc, BSc; W. Peter Geis, MD

Northwest Hospital, Randallstown, MD.

Objective: Clostridium difficile infection is currently the leading cause of nosocomial diarrhea in adults. The disease incidence has doubled in the USA from 2001 to 2005, carrying 9% mortality versus 2% for all other hospital admissions. Mortality in the USA for colectomy due to C. difficile is 35%-80%. Clearly, earlier diagnosis and astute diagnostic modalities are necessary to alter this process. We investigated likely methodologies to diminish morbidity and mortality.

Methods and Procedures: Herein we assess a case of fulminant C. difficile associated with specific diagnostic/therapeutic issues, providing insights toward earlier diagnosis and focused management in the future.

Results: Our patient is a 54-year-old white female presenting with signs of fulminant colitis; admitting studies showed stool culture positive (C. Difficile); CT scan delineated long segments of extensive colonic wall thickening. The patient was treated initially non-operatively, but subsequently bled intermittently from rectum. Two colonoscopies and MRA showed no evidence for the source of bleeding. Patient went urgently to surgery for continued bleeding. Laparoscopy followed by ileostomy and colonic lavage was considered. However, findings included purulent/feculent peritonitis and perforations of transverse, right, and sigmoid colon, as well as abscesses below the transverse colon. Perforations contraindicated colonic lavage. Total
abdominal colectomy was performed. Sigmoid colon had perforated and sealed to the ascending colon; postoperatively, the patient improved coincident with adequate nutrition and broad spectrum antibiotics.

Conclusion: This experience reinforces early diagnosis with CT scan, colonoscopy, and laparoscopic exploration, followed by either ileostomy with colonic lavage or total colectomy.

136GYN

**Bilateral Primary Fallopian Tube Carcinoma: A Case Report and Review of the Literature**

Michael S. Kinson, MD; Demaretta S. Rush, MD; Nash S. Moawad, MD, MS

University of Florida College of Medicine

Objectives: We present a case of bilateral primary serous adenocarcinoma of the fallopian tubes, stage IB, without local or regional metastasis. Methods: Case description, presentation of surgical and pathologic findings, and review of the relevant literature.

Results: A 53-year-old premenopausal female presented with mucoid vaginal discharge, menorrhagia, pelvic pain, and dyspareunia. Transvaginal ultrasonography revealed a thickened, heterogeneous endometrium and a 3.9 cm left ovarian cyst. Endometrial biopsy showed benign polyps. She desired laparoscopic hysterectomy and ovarian preservation, and surgical findings included stage II endometriosis, bilateral hydrosalpinges, and normal ovaries. Pathology returned primary fallopian tube serous adenocarcinoma, stage IB, grade 3, involving both tubes but not the uterus. Cancer antigen 125 was 26, and subsequent exploratory laparotomy with staging was negative for disease. After 4 cycles of adjuvant carboplatin and paclitaxel, follow-up imaging at 5 months confirmed she remained disease free.

Conclusions: Primary fallopian tube carcinoma is a rare disease. Presenting symptoms include watery vaginal discharge, bleeding, pain, and a pelvic mass, similar to the present case. Surgical findings did not match pre-operative imaging in this case, which may include a “sausage-shaped” pelvic mass, hydrometra, and hydrosalpinges. Fallopian tube carcinoma presents at a lower stage with a higher grade than epithelial ovarian cancer. Bilateral high-grade serous carcinomas in the present case are limited to stage IB, consistent with synchronous bilateral fallopian tube primaries, and illustrating the protective effect of bilateral salpingectomy for sterilization and the necessity of further study into the genetic mechanisms of serous tubal intraepithelial carcinoma.

141GS

**The Present Conditions and Problems of Hand Assisted Laparoscopic Surgery (HALS) for Ulcerative Colitis Patients**

Tetsushi Kinugasa, MD, PhD; Yoshito Akagi, MD, PhD Kurume University

Objective: Hand assisted laparoscopic surgery technique (HALS) is a recent modality for treatment of patients with ulcerative colitis (UC). This study aimed to assess whether HALS changed the development of patients with UC.
Methods & Procedures: A total of 16 patients with UC underwent surgical treatment (total colectomy + IACA + temporary ileostomy) from January 2009 until December 2015 at Kurume University Hospital. The patient details, operative indication and complications were obtained from our prospective database.

Results: The average age of patients was 44.9 years old. Male to female ratio is 7 cases: nine cases. Surgical indications were four cases with cancer, 12 cases with medical treatment resistance. The average surgery time is 299.7 minutes, the average amount of bleeding is 319 g, and the average hospital stay was 28.7 day. There were no serious postoperative complications without 3 cases of ileus. HALS, which gets fingers palpation and the sense of touch, can be obtained safely and reliably. The advantages of HALS ensure the vision by using endoscope even small incision.

Conclusion: HALS may safe and effective procedure for UC patients. But from the results such as an amount of bleeding or the operative time, we need improvement of surgical techniques.

143GYN

Qualitative Evaluation of 0- and 30-degree Laparoscope Usage in Preventing Injury During Diagnostic Gynecologic Laparoscopy

Hatern Tintara, MD; Nantaka Ngaojaruwong, MD; Satit Klangsins, MD

Prince of Songkla University

Objective: In standard diagnostic gynecologic laparoscopy, following first trocar placement, a 30-degree telescope is inserted to guide an accessory port insertion before the procedure is performed. We studied whether using a 0-degree telescope, the standard angle used in operative laparoscopy, would provide a comparable outcome in abdominal-wall structure identification and injury avoidance when compared to the standard procedure.

Methods: After the first trocar was placed, a 5-mm telescope with either a 0- or 30-degree viewing angle was inserted. Videos were used to record the examination of abdominal-wall anatomical landmarks including left and right rectus muscle borders, left and right deep inferior epigastric vessels, and upper border of urinary bladder. Blinded to the angle of the telescope used, gynecologists with three levels of experience - three physicians per level, were shown the videos and asked to rate the quality of anatomical landmarks viewing and their confidence level in avoiding injury to those structures.

Results: The study was conducted in 26 patients. The viewing qualities of all 5 anatomical landmarks using 0- and 30-degree telescopes were not statistically different across gynecologists of all three experience levels. The confidence levels of all gynecologists in the study in avoiding injury to the rectus muscle, deep inferior epigastric vessels and urinary bladder were also not statistically different when 0- or 30-degree telescopes were used.

Conclusion: Using a 0-degree telescope resulted in a comparable quality in identifying inner abdominal-wall structures and gynecologists’ confidence levels in avoiding injury during laparoscopy compared to the standard 30-degree telescope.
Laparoscopic Herniorrhaphy for Hiatal Hernia: 20 Years Experience and a New Classification

Qiusheng Wang, Prof Dr Med

Peking University People’s Hospital

Objective: There are no clear differentiation between mixed type and giant hiatal hernia in Barrett and Shinner classification. In addition, short esophagus and recurrent hernia are not considered. A new classification on hiatal hernia was proposed based on our 20 years experience of laparoscopic herniorrhaphy.

Methods & Procedures: From 1995 to 2015, 240 patients diagnosed by GI imaging and gastroscopy were treated laparoscopically. There were 118 male and 122 female with an average age of 55 yrs. Type I is sliding hernia, type II is paraesophageal hernia, type III is mixed hernia (hernia ring<5cm) and type IV is complicated hernia, e.g. including giant or large hernia (hernia ring>5cm), other organs enter the hernia sac, the stomach body migrates up by rotating, short esophagus, recurrent hernia. Simple hernia repair with funduplication were conducted in 152 pts and the other 88 pts were applied with mesh.

Results: Among them, type I was 27% (64/240), type II 2% (6/240), type III 30% (72/240), type IV 41% (98/240). All patients were routinely to perform laparoscopic funduplication (Nissen 20, Toupet 218, Dor 2) after simple repair or mesh repair. Two patients were converted to open surgery (0.8%). The mean operating time was 90 min, and blood loss was 15ml. Among 5 cases of mesh related complication (stricture 3, erosion 1, infection 1), 4 of them were redo laparoscopically.

Conclusion: The new classification was practical and valuable in the clinic.

Hybrid Minimally Invasive Surgery: integration with flexible endoscopy. Optimizing your approach

Seda Dzhantukhanova, MD, PhD; Yury Starkov, MD, PhD; Elena Solodinina, MD, PhD; Mikhail Vyborniy, MD, PhD

A.V. Vishnevsky Institute of Surgery Background: As a minimally invasive techniques continue to evolve, the use of flexible endoscopy became increasingly important in gastrointestinal (GI) surgery.

Goal of the study: The main goal of our study was to demonstrate the combined application of rigid and flexible endoscopy in order to make a procedure more accurate and less invasive.

Study: In our clinical practice we used intraluminal endoscopy during different procedures: thoracoscopic diverticulectomy, laparoscopic cardiomyotomy, pyloroduodenoplasty, laparoscopic gastric and colon resection. In laparoscopic gastric surgery endoscopy was used simultaneously during laparoscopy to localize the tumor and to ensure negative margins of resection. Endoscopic navigation, allowed identification of the small lesions with mainly intraluminal growth intraoperatively and also control full-thickness stapler resection. Similarly, during colon surgery we used colonoscopy for identification of the small tumors or the location of the polypectomy scar in the cases of adenocarcinoma in polyp histopathology. We used colonoscopy to
evaluate colon lumen and anastomosis in terms of bleeding and competence by insufflation of air, which helps to avoid leaks and bleeding complications. During diverticulectomy esophagoscopy facilitate identification of the neck of large diverticulum and was used at the step of resection to control the lumen width and evaluation of suture line. Our experience showed that the use of intraoperative endoscopy in GI surgical procedures to plan, direct or assess resection improves outcomes.

Conclusion: The combination of rigid and flexible endoscopy allows to get a creative approach, which provide a number of advantages, including improved localization of lesions, elimination of complimentary procedures and prevention of postoperative complications.

171GS

The Analysis of Safety and cost Effectivity of Trans-Umbilical Laparoscopic Assisted Appendectomy (TULAA)

Erika Machida, MD; Taro Ikeda, MD; Osamu Takata, MD; Takayuki Masuko, MD; Toshiki Rikiyama, Prof Saitama Medical Center, Jichi Medical University

Acute appendicitis is the most common cause of acute abdominal pain which require surgical procedure. Laparoscopic appendectomy (LA) has become routine procedure, and more cosmetic and less frequent SSI than that of open appendectomy. Recently, the idea of minimally invasive surgery introduce modifications exist that promote cosmetic and efficiency (e.g., SILS; Single incision laparoscopic surgery). However, expensive equipment and specialized training is necessary.

The method of TULAA (Trans-Umbilical Laparoscopic Assisted Appendectomy) gives a similar cosmetic result as SILS appendectomy and furthermore, reduces the cost of expensive equipment which are utilized in standard laparoscopic surgery. We investigate safety and cost effectivity of our TULAA comparing with conventional 3 port laparoscopic appendectomy (CLA).

In our institution, the indication of TULAA is for the teens actively. Average age, operation time in the TULAA group comparing with CLA were 11.9 vs. 53.4 old-years, 56.2 vs. 97.6 min (p<0.05). Blood loss was 3.65 ml vs. 8.53ml (p=0.3544). The length of post-operative hospital stay was 3.2 vs. 7.1 days. Times of using pain killer and antibiotics was 3.24 / 3.71 vs. 10.36 / 11 times. Thereafter, TULAA for young generation was less invasive that of CLA for adult. Furthermore, average operative disposable equipment cost was also significantly less in TULAA that of CLA ($90 vs. $877). It is important for patients in poor living condition.

TULAA is an efficient, feasible operation method that is cosmetically superior to CLA. Furthermore, TULAA is less expensive and associated with equivalent morbidity. Our TULAA experience could lead in reducing the cost of national medical expenses.

173GS

Primary Omentum Infarction. A Rare Cause of Acute Abdominal Pain and Great Mime of Acute Appendicitis

Christos Liakos, MD; Stratoulias Konstantinos, MD, FACS; Kalantzis Georgios, MDAthens Medical Center
Objective: A rather rare cause of acute abdomen, that mimics the symptoms and signs of acute appendicitis, is the primary segmental infarction of the greater omentum.

Method and Procedure: A young male patient presented with acute onset of abdominal pain at the right upper quadrant with irradiation to the right iliac fossa. Laboratory results where indicative of acute abdomen. Ultrasound was negative and the CT scan indicated a pathologic omentum.

Results: Prompt initiation of antibiotics and antinflammatories didn’t improve the clinical situation. An exploratory laparoscopy was performed and revealed an infarcted segment of the greater omentum. An omentectomy was performed and the patient recovered promptly over the next two days.

Conclusion: Primary infarction of the omentum is a rare clinical entity that should be promptly treated surgically when conservative treatment is not ameliorating the patient’s clinical condition.

174GS

Low Grade Appendiceal Mucinous Neoplasm. An Incidental Finding

Christos Liakos, MD; Stratoulias Konstantinos, MD; Kalantzis Georgios, MD

Athens Medical Center

Objective: Appendectomy is a common surgical procedure accounting for 55 percent of all emergency operations. In up to 5 percent of the specimens obtained there will be a neoplastic lesion discovered incidentally.

Method and Procedures: A 65 and a 30 year old patients both presented with typical clinical presentation, laboratory and imaging findings of acute appendicitis. They both underwent a laparoscopic appendectomy.

Results: The pathology report revealed a low grade appendiceal mucinopus neoplasm. The patients had an uneventful recovery with recommendation for follow up CT scan at 6 and 12 months and colonoscopy at one year.

Conclusion: Appendiceal tumours are uncommon and most often present as appendicitis. Most are benign and can be managed by an appendectomy except adenocarcinomas and carcinoids bigger than 2cm that need right hemicolectomy.

175GS

Synchronous Colon Cancers. A Rare Entity

Konstantinos Stratoulias, MD; Christos Liakos, MD; Georgios Kalantzis, MD

Athens Medical Center
Objective: Synchronous colorectal cancers are defined as multiple malignant cancers that occur simultaneously. Their incidence is between 2 and 5 percent.

Method and Procedures: A 64 years old patient after a hemorroidectomy complained for continuing blood loss from the rectum. A colonoscopy, that was not done prior to the hemorrhoidectomy, revealed three synchronous colon cancers, in the sigmoid, descending and transverse colon. Imaging was negative for secondary metastatic sites. A laparoscopic subtotal colectomy was undertaken.

Results: Pathology report indicated three synchronous adenocarcinomas of the colon. One was at the rectosigmoid junction and was a T3 lesion, the second one at the descending colon was a T1 lesion and the third one at the transverse colon was a T2 lesion. There were 30 positive lymph nodes out of 72 harvested and an omental metastasis. Final stage pT(m)3N2M1a.

Conclusion: Laparoscopic resection of synchronous colon cancers is a safe and feasible procedure that improves the outcome.

176GS

A New Trend Toward Younger Ages for Colon Cancer. Is It True?

Konstantinos Stratoulias, MD; Christos Liakos, MD; Georgios Kalantzis, MD

Athens Medical Center

Objective: Colon cancer incidence in young ages is increasing in the recent years.

Patient and Methods: A 36 year old mother with a family history of familial adenomatous polyposis, a 36 year old male with a father suffering from metastatic colon cancer, and a 30 years old woman with no family history or other predisposing condition, presented with colon cancer. The first one with familial adenomatous polyposis presented with obstructive symptoms and underwent laparoscopic total colectomy with colostomy, the 36 year old male underwent a laparoscopic right hemicolectomy and the third one a laparoscopic low anterior resection with prophylactic loop ileostomy. The two of them needed additional chemotherapy.

Results: All three patients are in a close follow up and only the two women needed chemotherapy. The loop ileostomy was closed after the end of the chemotherapy. The end colostomy will be closed after completion of the chemotherapy if during surveillance of the 4-5cm of the remaining rectum there are no more polyps.

Conclusions: For reasons not fully understood the incidence of colorectal cancer under the age of 40 is increasing and more studies should be carried out to determine new guidelines and better outcomes.

178GYN

Audit of Laparoscopic Entry Techniques in Gynaecology

Hany Habeeb MD
Medway Maritime Hospital

Objective: Laparoscopy is one of common surgical procedures in gynaecology. It is now the method of choice in the treatment of benign gynaecological conditions. The incidence of major complications associated with laparoscopy is around 6/1,000 cases and life threatening complications occur in about 4/10,000 cases. The entry related complications represent 50% of the above mentioned figures. The aim of this audit was to compare the practice of the laparoscopic entry techniques among various gynaecologists and also the incidence / sequelae of the complications associated with the different approaches used during the study period.

Methods and Procedures: A prospective audit over one month period (May-June 2014). All laparoscopic cases performed during the above period were included in the study. A simple pro-forma for data collection was used. The completed forms were completed and analysed on a weekly basis.

Results: Fifty cases were included in the above study. There was a 100% compliance with the recommended standards. Most gynaecological surgeons favoured the Verres needle technique. There were no reports of significant intraoperative or post-operative complications. The majority of patients went home on time. There were no reports of re-admissions with any significant post-operative issues up to 4 weeks after the planned procedure.

Conclusion: The current practice regarding the entry techniques is safe and should be continued with. A re-audit should be planned in two years’ time from the original audit date

182GS

Minilaparoscopic Appendectomy due to Mucocele

Diego L. Lima, MD; Gustavo Barros Alves de Carvalho; Yukie Correia Konishi; Flavio Carvalho Santos Filho; Vladmir Goldstein de Paula Lopes; Gustavo Lopes de Carvalho, MD, PhD

Universidade de Pernambuco

Objective: To demonstrate the use of Minilaparoscopy on an appendix of tumor treatment.

Method: DSO, 45 y/o, male, BMI 29.72; the patient sought a urologist to investigate his dysuria, the CT scan showed a cystic lesion on medium-distal cecal appendix. The operation was performed with the patient in the left lateral inclined position. An 11mm trocar was introduced at the umbilical region and a pneumoperitoneum was made. The following three low friction 3.5mm trocars were inserted. We emptied the piece in an disposable specimen pouch for easy removal and prevent spread of neoplastic cells into the abdominal cavity. The surgical time was 1h40min.

Result: The surgery proceeded uneventfully. The specimen was sent to pathological study and tumor bank. chemotherapy was not necessary and the patient is currently well on follow-up.
The New European Telesurgical System with Force Feedback

Michael Stark Prof Dr Med
NESA

Objective The new European telesurgical system will be presented which combines the advantages of laparotomy and endoscopy, providing force feedback although working endoscopically. Among its features are eye tracking system with 3D vision, force feedback, unlimited access to the patient throughout surgery and working from all sides and angles like trans-douglas.

Methods and Procedures In order to assess the validity of this system, experimental preclinical procedures in various surgical fields were performed and after approval for clinical use in Europe for abdominal and thoracic surgery, In the pre-clinical studies, the operation time for total nephrectomy of 70 minutes in the first case was reduced to 18 minutes in the 10th case. The average time for cholecystectomy was 31.75 minutes (30-35), compared to 91 minutes in a conventional system. Similar results were shown by partial nephrectomy – 115 (110-120) vs. 140 minutes. The first clinical studies at the Catholic University of Sacred Heart in Rome, under the leadership of Prof. Giovanni Scambia, 146 gynecological operations were successfully done with no single conversion. 10 ovarian cysts were enucleated using the system and the median operation time was 46.3 min. Postoperative follow-up was uneventful. Ten gynecological surgeons completed a training program using the system; mastering the use of the system rapidly.

Conclusions This system proved to be efficient, reliable and useful. No single failure occurred and no technical problem occurred throughout the pre-clinical studies. Its use and further development promise added value to the traditional endoscopic operations.

Prostatic Urethral Lift for Refractory Urinary Retention

Carson Wong, MD1; Hoo Yin Wong2; Michael T. Barkoukis1

1SouthWest Urology, LLC; 2Metropolitan Urologic Specialists

Introduction: The prostatic urethral lift (PUL) is a new technology for the treatment of lower urinary tract symptoms (LUTS) secondary to benign prostatic hyperplasia (BPH). We review our initial PUL experience treating refractory urinary retention.

Methods: We prospectively evaluated our initial PUL experience. Urinary retention patients failing medical therapy underwent office-based PUL by a single surgeon (CW). Peri-procedure oral sedation and antibiotics were provided. Under local anesthesia, transurethral PUL was performed through a 20Fr cystoscope with normal saline irrigant. Four to 6 implants were deployed. Voiding trials were performed immediately post procedure; if unable to void, a urethral catheter was inserted.

Results: PUL was performed on 2 consecutive patients with refractory urinary retention, aged 65 and 76. Despite tamsulosin/finasteride and tamsulosin, respectively, both patients remained catheter dependent after 3 voiding trials. Neither patient had neurologic pathology. Their mean prostate volumes were 55.3cm3 and
78.0cm³, requiring 4 and 6 implants, respectively. Volitional voiding resumed immediately post procedure in both patients, recording bladder scan post void residual measurements of 84cc and 0cc, respectively. Urethral catheterization was not required and both patients were able to discontinue their prostate medications. No immediate or delayed adverse events were noted. International Prostate Symptom Scores were 4 and 5, respectively, 1 month post procedure.

Conclusions: Our initial results suggest that PUL is safe and effective for the treatment of refractory urinary retention secondary to BPH. Continued follow-up is in progress.

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208URO

**Application of a Prostate Cancer Diagnostic Blood Test in a Community Urology Practice to Help Determine the Need for Repeat Prostate Biopsy in At Risk Patients**

Hoo Yin Wong, MD1; Carson Wong, MD2

1Metropolitan Urologic Specialists; 2SouthWest Urology, LLC

Introduction: Given the potential for a false negative prostate biopsy in patients, use of a prostate cancer diagnostic blood test that combines four kallikrein assays with clinical information in a proprietary algorithm may be appropriate. We evaluate its utility.

Methods: We review prospectively collected data on consecutive patients who had an elevated serum prostate specific antigen (PSA), increased PSA velocity or abnormal digital rectal examination (DRE) and subsequent negative transrectal ultrasonography guided prostate biopsy. A blood test score of 7.5% was the cutoff to identify those having an increased risk of aggressive prostate cancer (Gleason score ≥7).

Results: 35 patients were identified (30 Caucasian, 5 African American), having a mean age of 63 (45-75) years. The mean PSA at presentation was 5.83 (0.68-17.98) ng/dL, with 7 patients having increased PSA velocity and 2 patients having an abnormal DRE. Biopsy pathology showed 7 patients with atypical glands and 11 patients having high grade prostatic intraepithelial neoplasia. Based on the free PSA percentage, repeat prostate biopsy was recommended in 6 patients. Based on the blood test score, repeat biopsy was recommended in 10 patients. Four patients in who repeat biopsy was recommended based on free PSA percentage did not require repeat biopsy based on the blood test score. Pathology results remain pending at the time of abstract submission.

Conclusions: Preliminary results suggest the blood test score provides additional information that helps counsel patients regarding their need for repeat prostate biopsy. Additional performance of this test compared with repeat biopsy pathology will allow for a true assessment of its utility.

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211GS

**Colonscopy Induced Sigmoid Volvulus: Treatment with Gastrograffin Enema**

Anjandeep Kaur Deol (Surgical Medical Student)1; Ruchi Dhyani, BSc2; W. Peter Geis, MD3
1Siani Hospital, Baltimore; 2Northwest Hospital, Balitmore; 3Northwest Hosptial, Balitmore

Introduction: Colonoscopy, the key screening tool for colorectal cancer (over the age of 50), is incomplete in 10% of procedures. Patients with long and/or tortuous colons have a higher likelihood of incomplete colonoscopy. Further, volvulus may be induced by attempted colonoscopy in patients with tortuous colons.

Methods: Herein, we report an acute volvulus of a sigmoid colon occurring during a first colonoscopy in a 55 year old obese and black female. The observation of sigmoid volvulus occurred during the colonoscopy. Attempts to reverse the volvulus colonoscopically were unsuccessful. After recovery, the patient underwent a gastrograffin enema which reduced the volvulus and delineated the long, tortuous sigmoid colon.

Results: Review of the literature reveals risk factors for incomplete colonoscopy to include: anatomy, female gender, previous surgery, low body mass index, and older age. Anatomy, especially long, tortuous colons and – in particular the redundant sigmoid colon - increases the likelihood of volvulus with or without manipulation. Reviews have also identified colonic volvulus occurring: during pre-operative bowel prep, after colonoscopy, or during colonoscopy – our patient. Detorsion can be accomplished using: small, rigid scopes, water emersion techniques or gastrograffin enema.

Conclusion: The literature, identifies occurrence of incomplete colonoscopies due to many factors: including pre-operative (bowel prep induced) volvulus and volvulus during colonoscopy. Our patient re-iterates occurrence of sigmoid volvulus during colonoscopy in a patient with redundant sigmoid colon. Risk factors are reviewed, the volvulus was successfully reduced by gastrograffin enema - and the redundant sigmoid colon was identified.

227GS

Pure Laparoscopic Right Hemihepatectomy via Anterior Approach

Chen Huanwei, Prof Dr Med; Deng Feiwen, MD; Li Jieyuan, Dr Med

The Affiliated Foshan Hospital, Sun Yat-Sen University

Objective: In open hepatectomy ear, right hemihepatectomy via anterior approach has been accepted as one of the standard methods in some specialized centers. However, pure laparoscopic right hemihepatectomy by anterior approach is technically demanding. Here, we described the technique of pure laparoscopic right hemihepatectomy via anterior approach.

Methods & Procedures: We performed three pure laparoscopic right hemihepatectomies via anterior approach between 2013 and 2014. This video illustrated this procedure steps in a 32 years old male with hepatocellular carcinoma. Right hemihepatectomy was performed after hemihepatic vascular inflow occlusion using the lowering of the hilar plate approach. The hepatic parenchyma transection via anterior approach was performed with Ligasure, ultrasound scalpel and bipolar electrocoagulation. The right hepatic vein was divided with an endoscopic vascular stapler. Thereafter, mobilization of the right liver was performed.

Results: The operation time was 240 minutes and the blood loss was 150 ml. The recovery was uneventful and the patient discharged on postoperative day 8. The pathology was hepatocellular carcinoma with vascular invasion, and also satellites foci adjacent to the main tumor. The resection margin was negative.
Conclusion: Pure laparoscopic right hemihepatectomy via anterior approach was safe and feasible.

242GS

Laparoendoscopic Rendezvous for Treating Cholelithiasis with Concomitant Choledocholithiasis Unsuitable for LCBDE

Zhining Fan, MD; Xiang Wang, MD; Li Liu, MD; Min Wang, MD; Lili Zhao, Ph.D.
The First Affiliated Hospital with Nanjing Medical University

Background: 10-15% choledocholithiasis patients is reported with cholelithiasis. It’s still controversial for defining the ideal strategy, either laparoscopic management or ERCP. For some ERCP-failed cases, intraoperative ERCP (IO-ERCP) using the laparoendoscopic rendezvous technique followed by laparoscopic cholecystectomy (LC) was effective and safe. Rare reports showed the recommended strategy for patients not suitable for laparoscopic exploration. Our aim was to evaluate the advantage of IO-ERCP combined with laparoendoscopic rendezvous for these patients.

Methods: Magnetic Resonance Cholangiopancreatography (MRCP) was performed to assess the CBD diameter and stone number. With informed consent, IO-ERCP and laparoendoscopic rendezvous would be applicable while the CBD diameter was

Results: Total 10 patients received the management of combining IO-ERCP and LC. Male/Female was 4/6. The mean CBD diameter was 0.85cm (0.7-1.0), while the stone number was 2.1 (1-3). The operation lasted for 120.8min (98-154 min). No PEP or severe complications occurred. Patients were discharged after 4.8-day (3-7) hospitalization and the average costs were 35,000 RMB (33,000-38,000 RMB).

Conclusion: Combining IO-ERCP and LC for patients with these indications was efficient, safe and cost effective. Cooperating management ensured the successful cannulation, even without radiography. This innovative strategy could reduce the sphincter damnification, avoid post-operative stricture of CBD and prevent the PEP occurrence.

243GS

Laparoscopic Resection of Primary Retroperitoneal Tumors

Cheng Hua Luo MD PhD Peking University International Hospital

Objectives: To assess the outcomes of retroperitoneal tumors undergoing laparoscopic resection.

Methods: Ten patients that underwent laparoscopic surgeries in Peking University International Hospital between January 2015 and October 2015 were retrospectively reviewed.

Results: Age range was 3-68 years, and 7 were women. The mean tumor size was 12.3cm. Tumor located in pelvic (4), right upper (3) and lower (2) abdomen, and abdominal wall (1). The pathological findings include benign: cyst (1), fibroma (1), teratoma (1), lymphangioma (1), and malignant: liposarcoma (1), leimyosarcom
(1), adrenal cortical carcinoma (1), pheochromocytoma (1), adenocarcinoma (2). Median operative duration was 226.5min. Mean blood loss was 942ml. R0 resection were arrived in 80%. No perioperative death and complication were found in this group.

Conclusion: Laparoscopic resection is safe and effective for retroperitoneal tumors.

244GS

Endoscopic Pyloromyotomy via Gastric Submucosal Tunnel Dissection: A Promising Technique for Gastroparesis

Zhining Fan, MD; Xiang Wang, MD; Li Liu, MD; Min Wang, MD; Lili Zhao, PhD
The First Affiliated Hospital with Nanjing Medical University

Background and aim: Pyloroplasty has been common for the pyloric diseases. But it is still associated with complication of leakage, post-operative stenosis and general anesthesia. The development of minimally invasive but reliable method is highly desired. Inspired by the peroral endoscopic myotomy to treat achalasia, the novel technique of endoscopic pyloromyotomy has been designed. The aim of this study is to investigate the feasibility and efficacy of endoscopic pyloromyotomy via gastric submucosal tunnel dissection.

Materials and methods: 5 pigs were studied for the procedure. The pyloromyotomy via the submucosal tunnel dissection was performed as the follows: (1) the incision site of mucosa was defined on the posterior gastric antral wall 5cm proximal to the pylorus; (2) saline solution mixed with norepinephrine and methylene blue was topically injected for submucosal lifting; (3) 1-2cm mucosal incision in longitudinal length was made to create the submucosal tunnel entry; (4) The submucosal layer was carefully disassociated until pyloric muscular layer was identified; (5) 1-2cm pyloromyotomy were performed; (6) After endoscope withdrawal, mucosal defect were closed with clips. Pigs were euthanized and necropsies were performed.

Results: Dissection of pylorus muscle was successful in the pigs. Bleeding was limited during the procedure. No complication of perforation was observed.

Conclusions: The endoscopic gastric submucosal tunnel dissection technique was feasible and effective for pyloromyotomy. It is also easy to perform and minimally invasive for clinical application. Further studies need to perform for confirming the safety and efficacy on the human, and the clinical advantages other than traditional techniques.

249GS

Laparoscopic Herniorrhaphy for Hiatal Hernia: 20 Years Experience and a New Classification

Qiusheng Wang, Prof Dr Med
Peking University Peoples Hospital
Objective: Both Barrett and Shinner classification do not include short esophagus and recurrent hernia. There is no clear differentiation between mixed type and giant or large hiatal hernia in the above mentioned classifications. A new classification on hiatal hernia was proposed based on our 20 years experience of laparoscopic herniorrhaphy.

Methods & Procedures: From 1995 to 2015, 240 patients diagnosed by GI imaging and gastroscopy were treated laparoscopically. There were 118 males and 122 females with an average age of 55 yrs. According to modified classification, type I is sliding hernia, type II is paraesophageal hernia, type III is mixed hernia (hernia ring < 5cm) and type IV is complicated hernia, e.g. including giant or large hernia (hernia ring > 5cm), other organs (colon, spleen, etc.) to enter the hernia sac, the stomach body migrates up by rotating, short esophagus, recurrent hernia. Simple hernia repair with funduplication were conducted in 152 pts and the other 88 pts were applied with mesh.

Results: Among them, type I was 27% (64/240), type II 2% (6/240), type III 30% (72/240), type IV 41% (98/240). All patients were routinely to perform laparoscopic funduplication (Nissen 20, Toupet 218, Dor 2) after simple repair or mesh repair. Two patients were converted to open surgery (0.8%) due to esophageal perforation and hemorrhage from variant left liver artery. The mean operating time was 90min, and blood loss was 15ml. Among 5 cases of mesh related complication (stricture 3, erosion 1, infection 1), 4 of them were redo laparoscopically.

Conclusion: The new classification was practical and valuable in the clinic.

254GYN

Pattern of Recurrence After Open Versus Robot Assisted Radical Hysterectomy in Patients with Early Stage Cervical Cancer.

Bilal M Sert Assoc.Prof.

The Oslo University, The Norwegian Radium Hospital

Objective: This study investigates the pattern of disease recurrence and reporting the clinicopathologic prognostic factors for patients with early stage cervical carcinoma treated with open and robot assisted radical hysterectomy.

Methods & Procedures: Patients who underwent elective surgery both open and robot assisted radical hysterectomy between November 2005 and December 2012 were identified. Robot assisted radical hysterectomy were performed using the da Vinci robotic surgical platform. Patients demographic data and operative outcomes were prospectively collected in a database and extracted for this study.

Results: 215 patients were identified during the study period. None of the cases was converted to conventional laparoscopy. 19 neoadjuvant cases were excluded and total 196 patients were included in the study: 122 cases of open radical hysterectomy and 74 cases of robotic radical hysterectomy were identified between 2005 and 2012. The mean operating time for RRH and ORH were 263 and 171 minutes respectively. Estimated Blood Loss was significantly reduced in RRH compared to ORH, 80 ml versus 468 ml (P:0.003). The mean follow up times were 52 and 46 months in patients who underwent ORH and RRH respectively, significantly longer in open group. Disease recurrence was similar in both group (12 patients 9.8% recurrence in
Conclusions: Robotic radical hysterectomy under CO2 pneumoperitoneum may carry a risk of intraperitoneal and hematogeneous spreads in patients with early stage cervical cancer patients. However, larger, prospective and randomized studies are needed to formally conclude.

255GYN

Squamous Cell Carcinoma (SCC) of the Vagina After anterior Colporrhaphy with Mesh Exposure: A Case Report

You Fu, MD; Y.S. Chen, MD; Y. Zhang

Department of Gynecology, Obstetrics and Gynecology Hospital of Fudan University

Objective: Vaginal squamous cell carcinoma (SCC) is rare among all kinds of female malignancies. In the surgery treatment, the use of vaginal mesh in treatment of pelvic organ prolapse (POP) is having prevalence. This case presented a concurrence situation of tumor and mesh exposure.

Present and Investigation: We presented a 61-year-old patient with squamous cell carcinoma (SCC) of the vagina with a history of trans-vaginal hysterectomy, anterior colporrhapy and mesh implantation. The post-op pathology exam showed a CINII-III (high grade squamous intraepithelial lesion, HISL) of the cervix. Mesh exposure occurred 6 months after the surgery.

Results (Treatment): The surgical plan was made as laparoscopic pelvic lymph nodes dissection + radical parametrectomy + partial vaginectomy + mesh removal. Pathological frozen section was sent during the surgery to guarantee the negative incision edge. Post-operative pathologic examination confirmed squamous cell carcinoma. One out of fourteen lymph nodes from the pelvis was having metastasis.

Conclusion: Whether the malignancy in this case is associated with the meshimplantation or not is still under controversy. We tended to consider this squamous cell carcinoma being developed from the HISL, however, this case also indicated that when encountering mesh exposure with a carcinoma background, we should definitely consider biopsy instead of trimming it.

274GS

Mini-Laparoscopic Total Extraperitoneal Inguinal Hernia Repair with Self-Fixating Mesh

Shaina Rose Eckhouse, MD; Alfredo D. Guerron, MD; Phillip Shadduck, MD; Dana D. Portenier

Duke University

Background: Since initially described in 1992, laparoscopic total extraperitoneal (TEP) inguinal hernia repair has been described using three, two, and a single-port technique. The learning curve and operative time both
increase with decreasing the number of ports. The present video demonstrated a simple technique to perform a laparoscopic TEP with one trocar and two percutaneous instruments. Patient and

Method: A 55-year-old male with a body mass index (BMI) of 25 and no comorbidities presented with a 1-year history of worsening left groin limiting his activities of daily living. On physical examination, the patient had a bulge in the left groin. The patient was consented for a laparoscopic TEP hernia repair.

Results: The procedure was initiated under general endotracheal anesthesia. A 1.5cm incision was made to the right of the umbilicus. Once the anterior rectus sheath was incised, blunt dissection was used to develop the pre-peritoneal space for the balloon dissector, which was inflated under direct visualization. Two percutaneous instruments were placed in the midline. Each instrument was externalized through the camera port to exchange the instrument tips for dissection. The left indirect inguinal hernia was dissected from the spermatic cord after completing the lateral and medial dissection. Once the hernia was reduced, a self-fixating mesh was placed with the medial edge over covering Cooper’s ligament. Estimated blood loss was 10mL. The procedure took 74 minutes.

Conclusions: The present video illustrates a novel technique to minimize incision size and decrease number of trocars without compromising the location of the dissecting instruments.

275GYN

**Hysteroscopic Resection of a Huge Submucous Uterine Myoma by Means of Gradually Cutting from Bottom to Top Inside the Pseudocapsule: A Case Report**

Yue Y. Zuo Zuo BSM, Professor
Foshan Maternal and Child Health Care Hospital,The Affiliated Teaching Hospital, Southern Medicla University

A 36-year-old woman, G4P0A2, with severe blood loss anemia and a huge submucous uterine myoma was pretreated with a small dose ofmifepristone--12.5mg per day for 5 months. Amenorrhea sustained for 5 months without uncomfortable symptoms. After anemia correction, hysteroscopic resection under B-ultrasound monitering was carried out to remove a huge submucous uterine myoma by means of gradually cutting from bottom to top inside the Pseudocapsule. The myoma was 8cmx9cm in size and weighed 160g. The hysteroscopic surgery, composed of electrotyomy, forceps holding, traction and twist lasted one hour and fifty minutes with 300-400ml of operative blood loss. In the course of the surgery 20,000ml of 5% glucose perfusate was in use, among which 500ml was absorbed. The post-operation pathological report: leiomyoma uterus rich in cells. The patient left hospital two days after the operation.

280GYN

**The Use of a Multispectral High Resolution Digital Colposcope for In Vivo Examination and Detection of Cervical Intraepithelial Neoplasia**

Robert K Zurawin MD
Baylor College of Medicine
Objective: Cervical cancer is the leading cause of cancer death for women in developing countries. Optical screening can decrease the mortality of this cancer when pre-cancerous tissue can be detected and treated. An ideal device should be hand-held, affordable, and able to be integrated into the average physician’s practice.

Illumigyn has developed the GynescopeTM, a device based on machine-vision concept with an advanced electro-optical technologies that can improve the accuracy and availability of cervix screening. The GynescopeTM implements several technologies such as multi-spectral illumination, high-resolution (20 micron) image acquisition, and UV fluorescence. Such capabilities provide a large database for future algorithms that will be able to achieve in vivo diagnosis to highlight suspicion regions with high sensitivity and specificity. We claim that GynescopeTM can meet the global need for such a cervical cancer prevention optical device.

Methods & Procedures: 14 patients were examined by a board-certified gynecologist experienced in cervical colposcopy using the GynescopeTM colposcope. High-resolution photomicrographs were taken using various wavelength of light. Biopsies were obtained from areas determined to be suspicious for abnormality.

Results: The GynescopeTM colposcope accurately and reliably predicted the presence of cervical abnormalities and presented a durable high-resolution photographic record.

Conclusion: The GynescopeTM colpscope is a promising technology for the detection of cervical pathology.

284GYN

Hybrid Myomectomy- A Series of 21 Cases of Large Uterus with Leiomyoma

Rooma Sinha, MD; Madhumathi Sanjay, MD; Rupa Bana, MD

Apollo Hospital, Hyderabad, India

Objective: To evaluate a suitable minimally invasive technique of myomectomy in large uterus. Large leiomyomas are difficult to remove by laparoscopy alone. Limited access with DaVinci Robotic system continues to challenge the surgeon in cases with large uteri. In our series a combined hybrid approach was used for large uteri, with an initial myomectomy with laparoscopy followed by uterine reconstruction with DaVinci Robot.

Material & Methods: From January 2013 to December 2014, 21 women with large symptomatic leiomyomas were included in this study. Cases with total uterine height more than 20 weeks were selected for this approach. We recorded and analyzed the preoperative data, total surgical time and the split time between laparoscopic part and robotic part, and their postoperative outcomes.

Results: The mean age of the patients was 32.17 ± 5.82 years, the mean size of the largest fibroid was 8.3 ± 3.5 cm and average weight was 734±1005 gms. The average drop in haemoglobin from preoperative level was 1.392 ±1.06gms%. The total operative time was 160.55 ± 39.25 minutes; the average laparoscopic surgery time being 43.36 and average console time was 68.16 minutes. The average postoperative hospital stay (29.64 hours), none of our patients required conversion to either a minilaparotomy or conventional open surgery achieving myomectomy by minimal invasive surgery in large uteri.
Conclusion: Our case series demonstrates that Hybrid Myomectomy is a safe, effective and feasible method for enlarged uteri with large fibroids. Hybrid myomectomy achieved satisfactory results with no conversions to open surgery.

288GS

Vacuum Stabilization of the Spleen in Laparoscopic Splenectomy – Supplementary Video Presentation

Philip S.L. Gan, MB, BS;
Southwest Healthcare Warrnambool

Objective: The LiVac Retractor was evaluated for its efficacy in stabilization of the spleen during two laparoscopic splenectomies. Key aspects of the procedures are presented as supplementary material supporting the publication of the same title in the JSLS (DOI: 10.4293/JSLS.2016.00013).

Background: Patient recovery from laparoscopic splenectomy is greatly enhanced compared with the laparotomy approach, yet a minority are removed laparoscopically. The spleen is smooth, rounded and vascular, making it difficult to directly grasp, stabilise or retract laparoscopically. The LiVac Retractor is laparoscopic liver retractor comprising a soft silicone open ring, which apposes two substantially planar surfaces when a vacuum is applied. This is the first video demonstration of its use in retracting and stabilizing enlarged spleens in two laparoscopic splenectomies.

Methods: The two patients were consented for laparoscopic splenectomy with splenic retraction using the LiVac Retractor. The entire 3 port laparoscopic procedures were video-recorded, with key aspects of the procedures shown here.

Results: The spleen was retracted securely for the duration of the hilar dissection in both patients. Exposure of the splenic hilum was excellent and the two splenectomies were performed as two (with needlescopic grasper) and three port procedures. There were no visible signs of injury to either spleen and both patients’ recoveries were unremarkable.

Conclusion: The LiVac Retractor provided stable retraction and excellent exposure of the splenic hilum during both laparoscopic splenectomies without organ injury. Early hilar dissection with vascular control is facilitated, reducing the risk of bleeding from other components of the dissection.