

Video #1 | Abdominal/Laparoscopy

REDO REDO HIATAL HERNIA: THIRD TIMES A CHARM

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Background: One in five adults in the US suffer with GERD with hiatal hernia being a common cause. Greater than 95% of hiatal hernias are sliding or type 1 hernias. Individuals who have a Type 1 hiatal hernia (HH) and GERD and those with symptomatic Type 2-4 which are known as paraesophageal hernias should undergo surgical repair. Our patient is a 35 year old male underwent a laparoscopic Nissen fundoplication in 2010. He developed a recurrent HH requiring repair a year later. This revision eventually herniated again nine years later.

Objective: To demonstrate the work up and laparoscopic approach to recurrent hiatal hernia.

Methods: The video shows the dissection of removing the wrap from the mediastinum and careful dissection of the crura. We reinforced the cural repair with pledgets and placed a bioabsorbable mesh after carefully mobilizing the esophagus from the mediastinum and preserving the vagus nerves. The wrap was intact and did not need revision.

Results: The patient was discharged home on day 3. He had mild recurrent GERD at 4 months but upper GI was normal.

Conclusion: Recurrent HH can be safely addressed through the laparoscopic approach.

Video #2 | Abdominal/Laparoscopy

OPTIONS FOR TOTALLY INTRACORPOREAL STAPLED ANASTOMOSIS FOR ROBOTIC LEFT COLON RESECTION

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Background: Intracorporeal anastomosis after colonic resection has been shown to decrease length of stay, decrease time to first flatus, and improve post-operative pain. Robotic systems facilitate creation of anastomosis with use of articulating instruments, deep pelvic visualization, and ICG perfusion evaluation. Utilization of natural orifice specimen extraction provides further opportunity to perform totally intracorporeal anastomosis.

Objective: This video demonstrates the options and techniques for totally intracorporeal stapled anastomosis for robotic left colon resection. Options presented include side-to-end stapled anastomosis and end-to-end stapled anastomosis.

Methods: A robotic system was used with standard four port technique to demonstrate two methods of intracorporeal anastomosis. A side-to-end anastomosis is performed by introducing the EEA anvil through a proximal colotomy and securing it with a handsewn pursestring. The EEA stapler is introduced through the rectum to create the anastomosis. For an end-to-end anastomosis, the anvil is secured within the proximal colon and the EEA stapler is introduced through the rectum. A purse string is created around the EEA spike and the anastomosis is completed. Leak tests are performed for both anastomoses.

Results: Complete proximal and distal donuts were confirmed after each firing. Leak tests were performed intraoperatively and were negative. Both patients recovered well and were discharged on post-operative day two.

Conclusion: Robotic systems facilitate the creation of totally intracorporeal stapled anastomosis after left colon resection with articulating instruments, improved deep pelvic visualization, and ICG perfusion evaluation. These techniques, applied with natural orifice specimen extraction, are safe and provide the opportunity to remain totally intracorporeal for improved outcomes after surgery.

Video #3 | Abdominal/Laparoscopy

LAPAROSCOPIC COLO-VESICAL FISTULA TAKEDOWN WITH ICA TRANSVAGINAL EXTRACTION: A 3 PORT TECHNIQUE WITH NATURAL ORIFICE EXTRACTION

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Background: This video presents an operation that is a totally laparoscopic colo-vesical fistula takedown, intracorporeal anastomosis and transvaginal extraction of specimen.

Objective: To demonstrate successful laparoscopic sigmoidectomy and colo-vesical fistula takedown with natural orifice extraction

Methods: A 3-port technique is employed. There is chronic inflammation from the sigmoid colon due to diverticulitis that has resulted in a colo-vesical fistula. The colon is first mobilized from its lateral attachments and the colo-vesical fistula is taken down with ligasure. After adequate mobilization of the sigmoid, the proximal rectum is divided. A posterior vaginotomy is made and the Endo-GIA anvil is introduced intraabdominally. A colotomy is made in the proximal sigmoid specimen and the anvil is placed in the descending colon. The colostomy is closed with stratafix. The distal descending colon is then divided and the spike of the anvil is pulled through the proximal staple line. The sigmoid specimen and cap of the anvil are removed via the vaginotomy which is then closed. Intracorporeal anastomosis is completed with a 29 mm EEA stapler.

Results: Estimated blood loss 20 cc. Post operative hospitalization was 2 days. First oral intake on POD#0. Operation time 160 minutes.

Conclusion: Laparoscopic sigmoidectomy with colo-vesical fistula take down, intracorporeal anastomosis and transvaginal extraction of specimen using only 3 ports is feasible and safe with short postoperative hospital stay.

Video #4 | Abdominal/Laparoscopy

GALLBLADDER AGENESIS

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Background: Gallbladder agenesis is a rare congenital disorder that occurs in 40 of 100,000 patients. We present a case of gallbladder agenesis that was discovered intra-operatively during an intended operation for a cholecystectomy.

Objective: To display the pre-operative and post-operative imaging and intraoperative findings in the case of gallbladder agenesis.

Methods: A 35-year-old male presented with symptoms of colicky right upper quadrant pain radiating to his back that was exasperated by fatty foods. He additionally complained of dyspepsia and regurgitation. His workup included a trial of a proton-pump inhibitor, which failed to improve his symptoms, and an upper GI series, which was negative for a hiatal hernia or reflux. Liver function tests were normal. A right upper quadrant ultrasound showed a gallbladder completely full of stones, a wall diameter of 2mm, no pericholecystic fluid and a common bile duct diameter of 4mm. He was taken the operating room electively for laparoscopic cholecystectomy.

Results: Intra-operatively, no gallbladder was identified. The portal triad was identified. The case was concluded without conversion to open or a cholangiogram. Post-operatively, he underwent a MRCP where gallbladder agenesis was confirmed.

Conclusion: Gallbladder agenesis is a rare congenital abnormality that is usually identified intraoperatively. Commonly, patients are taken to the operating room for symptoms of biliary colic and pre-operative imaging interpreted as a constricted gallbladder with cholelithiasis. No conversion to an open procedure or cholangiogram is necessary when identified intraoperatively. A MRCP should be obtained to confirm the diagnosis.

Video #5 | Abdominal/Laparoscopy

ROBOTIC TRANSVERSUS ABDOMINUS RELEASE

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Background: This is a case presentation of a 44 year old gentleman with a ventral incisional hernia after exploratory laparotomy due to an abdominal gunshot wound. The patient underwent a robotic abdominal wall reconstruction utilizing bilateral transversus abdominis releases.

Objective: To demonstrate and discuss novel minimally invasive abdominal wall reconstruction techniques.

Methods: This is a video case presentation of a robotic transversus abdominis release.

Results: The ventral incisional hernia was successfully repaired.

Conclusion: Robotic transversus abdominis release is another technique in a surgeon's armamentarium for minimally invasive abdominal wall reconstruction.

Video #6 | Abdominal/Laparoscopy

ROBOTIC COLECTOMY, COLOVESICAL & ENTEROENTERIC FISTULA TAKEDOWN WITH TRANSANAL EXTRACTION IN A HIGH-RISK PATIENT

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Background: Recent advances in robotic techniques has allowed easier postoperative recovery

Objective: To highlight surgical technique and demonstrate outcome of a robotic colonic resection with transanal extraction in a high-risk patient.

Methods: We present a case of a 69 year old morbidly obese female with multiple comorbidities who had a diverticulitis-induced colovesical fistula and an entero-enteric fistula (from small bowel to sigmoid colon) with a miserable quality of life. She was deemed too high-risk for surgery by multiple surgeons. She underwent a robotic sigmoidectomy with takedown of colovesical fistula and colorectal anastomosis, takedown of entero-enteric fistula and small bowel resection with anastomosis, and transanal extraction of all specimen

Results: The case proceeded without complications. She had five trocar incisions without any extraction site. Patient was discharged home on postoperative day 1 without narcotic pain medications. She continues to do well on 6 month follow up

Conclusion: Robotic colonic resection with transanal extraction in high-risk patients with complicated underlying pathology is feasible with good outcomes

Video #7 | Abdominal/Laparoscopy

TECHNIQUE FOR SUCCESSFUL COMPLETION OF LAPAROSCOPIC MEDIAN ARCUATE LIGAMENT RELEASE

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Background: Compression of the celiac artery trunk by the median arcuate ligament (MAL) can cause significant post-prandial pain and weight loss. Difficulties in achieving an accurate diagnosis and morbidity of laparotomy based approaches limit routine exploration and ligament release for median arcuate ligament syndrome (MALS). Laparoscopy alters the risk-to-benefit ratio of MAL release to establish improved flow to the stomach and resolve symptoms rooted in visceral ischemia and neurogenic pathologies.

Objective: The purpose of this video is to compare the laparotomy based and laparoscopic based techniques for median arcuate ligament release using anatomic pictures and video to demonstrate critical. Technical elements of the laparoscopic learning curve are addressed in identification and division of the median arcuate ligament.

Methods: Patients examined in this retrospective review underwent surgery between 2015 and 2018. Diagnosis was established by angiography and trans-abdominal ultrasound. These studies demonstrated angulation of the celiac trunk and high arterial flow velocities. Confirmation followed after endoscopic ultrasound guided injection of anesthetic into the celiac ganglia led to subsequent symptomatic relief. In the laparotomy, laparoscopic intra-operative ultrasound was used to confirm arterial anatomy and demonstrate reduction in arterial flow velocities. Still images from the laparotomy exposure were compared with video of the laparoscopic technique. Patients were followed at 30 and 90 day intervals.

Results: Two patients were compared for the laparotomy-based and laparoscopic ligament release. Operative times were comparable between the two approaches. Initial exposure and retraction of the pars flacida was used to trace the base of the right crus to the celiac arterial trunk. Intra-operative ultrasound was used to identify anatomy in the laparotomy approach while laparoscopic visualization provided superior imaging for accurate dissection. Division of crural fibers was extended to the adventitia of the aorta in both cases. Dissection onto the celiac trunk was considered complete after identification and division of the inferior phrenic artery. Ultrasound in both cases demonstrated flow velocities that dropped from over 400 cm/s to less than 200 cm/s. The patient with the laparoscopic approach was discharged on hospital day 2 compared with day 5 for laparotomy. There were no complications or readmissions. Follow up at 30 and 90 day intervals demonstrated symptomatic resolution and significant weight gain for both approaches.

Conclusion: Laparoscopic median arcuate ligament release can be safely and effectively performed with avoidance of vascular complications compared with laparotomy. Laparoscopic visualization proved superior to laparotomy and operative time durations are comparable due to extensive use of ultrasound to identify anatomy in the latter

approach. Overall morbidity and hospital length of stay were improved for the laparoscopic approach demonstrating a minimal learning curve to median arcuate ligament release for surgeons skilled in advanced laparoscopy.

Video #8 | Abdominal/Laparoscopy

ROBOTIC RIVES STOPPA VENTRAL HERNIA REPAIR

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Background: Best practice for hernia repair is performance of a tension free repair using a wide mesh, preferably placed in a retromuscular location. Traditional laparoscopy has technical limitations that make performing these maneuvers difficult in a minimally invasive fashion. Robotic surgery has facilitated these basic principles of ventral hernia repair in the context of minimal access surgery.

Objective: Our objective is to demonstrate that minimally invasive hernia surgery using the robotic platform can achieve performance of a Rives-Stoppa ventral hernia repair.

Methods: We present a patient with a moderately sized incisional hernia defect, early in our series of robotic retromuscular hernia repairs. Access to the abdomen will be demonstrated using extended totally extra-peritoneal (ETEP) access. Retrorectus dissection and intramuscular placement of synthetic mesh will then be presented using the robotic platform.

Results: The patient recovered uneventfully had return of bowel function on postoperative day #3. The patient required minimal narcotics and has had no recurrent hernia at 6 months.

Conclusion: Robotic Rives-Stoppa ventral hernia repair with ETEP access is a novel technique with good short term results. Further study will be performed to validate long term outcomes.

Video #9 | Abdominal/Laparoscopy

ROBOTIC RETROPUBIC AND BILATERAL INGUINAL HERNIA REPAIR AFTER SIGMOIDECTOMY

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Background: Robotic assisted laparoscopy hernia repair in the oncologic population is a novel approach. This patient population often provides an additional degree of difficulty secondary to the multimodal approach of cancer treatment with abdominal radiation and multiple surgeries for oncologic resections. This report demonstrates robotic assisted laparoscopy for one such patient with bilateral inguinal and suprapubic hernia with a history of abdominal radiation and surgical resection.

Objective: To demonstrate the efficacy of robotic assisted laparoscopy in oncologic patient population through video.

Methods: The patient is a 79 year-old male with a history of metastatic melanoma of the scalp who had undergone multiple surgeries, immunotherapy regimens, and splenic radiation. On surveillance, he developed bright red blood per rectum and discovered a circumferential lesion of the sigmoid. It was recommended he undergo open sigmoidectomy in June 2018 with final pathology not revealing primary adenocarcinoma or metastatic melanoma. He had an additional abdominal surgery of a laparoscopic appendectomy for acute appendicitis in early 2019. Subsequently, he developed a suprapubic hernia from his prior surgery with incidental bilateral inguinal hernias on imaging. A robotic assisted laparoscopy approach was used to repair all 3 hernia sites.

Results: Robotic assisted laparoscopy hernia repair facilitated the technical challenges in repairing suprapubic and inguinal hernias. A single surgery was performed with short hospital course and quick recovery. The patient was discharged on postoperative day 1 with no evidence of hernia recurrence to date.

Conclusion: The use of robotic assisted laparoscopy adds value for oncologic patients with more complex hernia repairs due to facilitation of surgery, quicker recovery, and shorter hospital stay. As cancer survivors transition to survivorship, this technique will add value with their overall quality of life by addressing the sequela of cancer treatment.

Video #10 | Bariatric Surgery

LAP BAND EMERGENCY

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Background: A decade ago, the laparoscopic adjustable gastric band (LAGB) was a popular weight loss procedure. However, today it is nearly extinct. In 2011, more LAGBs were removed than placed. LAGBs are associated with three major complications: slip and/or prolapse and erosions.

Objective: To demonstrate the importance of understanding different weight loss surgery procedures and the complications that are associated with them as you may encounter those complications decades after they are extinct.

Methods: A 58 year old female underwent a LAGB in 2009. She had reasonable weight loss, losing 36 kg and maintaining. She had an episode of epigastric pain and vomiting and went to an outside ER two months prior to presentation. We removed her band fill and subsequently refilled it. She was fine for another month then presented with acute pain and vomiting. The LAGB was emptied with no relief so she was taken to the OR.

Results: The video delineates treatment of a LAGB that is causing obstruction. The upper gastrointestinal series is also reviewed as are options for treatment.

Conclusion: Surgeons should be familiar with LAGB and know how to remove them in an emergency.

Video #11 | Bariatric Surgery

SMALL BOWEL OBSTRUCTION AFTER GASTRIC BYPASS: NOT ALWAYS AN INTERNAL HERNIA

A Schrodtt, B Clapp

Texas Tech University HSC - El Paso

Background: Gastric bypass is one of the most common current weight loss procedures performed demonstrating excellent weight loss of up to 70% after one year. However, there are specific complications specific to this procedure that require emergent evaluation. Small bowel obstructions after gastric bypasses are usually due to internal hernia. However, not all small bowel obstructions are found to be from internal hernias, but could be from simple adhesive disease.

Objective: To demonstrate the importance of operating emergently on small bowel obstructions after a patient has undergone a gastric bypass. Also to show some of the technical techniques in laparoscopic treatment of small bowel obstruction.

Methods: A 67-year-old female underwent a laparoscopic gastric bypass in 2008 and developed an internal hernia 2 years later. She required emergent repair with closure of all mesenteric defects. 9 years after her last operation to repair her second internal hernia, she developed another small bowel obstruction with the JJ anastomosis displaced in the RUQ rather than its normal location in the left mid quadrant on recent CT concerning for a bowel obstruction. We took her urgently to the OR for a diagnostic laparoscopy and found a single adhesive band in the terminal ileum causing the obstruction rather than a third internal hernia. The JJ anastomosis was intact and no mesenteric defects were identified.

Results: The video shows the technique of addressing a small bowel obstruction in a gastric bypass patient.

Conclusion: Any patient who underwent a Roux-en-Y gastric bypass and presents with the signs and symptoms of a bowel obstruction requires emergent surgery. This can usually be safely performed laparoscopically.

Video #12 | Cardiothoracic

UNILATERAL ISOLATED DUCTAL ORIGIN OF A PULMONARY ARTERY – RESUSCITATION AND UNIFOCALIZATION OF THE PULMONARY ARTERY

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Background: Unilateral Ductal origin of a pulmonary artery (PA) is an uncommon congenital heart anomaly in which one of the pulmonary arteries is normally connected to the main PA, while the contralateral PA is originating from the ductus arteriosum. Postnatally, upon ductal closure, the affected PA ceases to receive blood flow. Since the remainder of the heart is normally formed, this does not result in cyanosis, and can therefore escape detection in the neonatal period. Failure to treat this condition may result in hypoplasia of the associated PA and lung, increased susceptibility to pulmonary infections, and other complications. Imaging studies typically fail to demonstrate blood flow to the affected lung, and may lead to an erroneous conclusion of agenesis or absence of the affected PA. This study aims at describing our surgical approach for resuscitation and reconstitution of blood flow to the affected PA and lung.

Objective: This case video describes our staged surgical approach for management of unilateral ductal origin of a pulmonary artery.

Methods: Preoperative workup of all patients includes, computed tomography of the chest with contrast, echocardiography, and cardiac catheterization which includes a pulmonary vein wedge angiography.

Results: The video presents two cases. The first case demonstrates the initial surgical procedure, via medial sternotomy, the ligamentum arteriosum is dissected out and used to guide the dissection towards the hilum of the lung, in order to identify and control the distal pulmonary artery. Once controlled, a systemic to pulmonary artery shunt is constructed, frequently using a saphenous vein graft. This first stage typically promotes development and achieves growth of the hypoplastic pulmonary artery. The second case demonstrates the subsequent surgical procedure, via repeat median sternotomy, the previously constructed shunt is dissected out, and controlled. The main PA and contralateral PA are dissected and controlled. Pulmonary artery unifocalization is achieved by anastomosing the resuscitated PA to the main PA with/without patch material. Both stages can be performed without the use of cardiopulmonary bypass (in some cases the second stage requires cardiopulmonary bypass).

Conclusion: Unilateral ductal origin of a pulmonary artery should not be confused with an absent pulmonary artery. Patients can undergo successful resuscitation of the isolated pulmonary artery with a combination of interventional and surgical approach with the goal of improving PA growth and blood supply and promoting normal lung development and function.

Video #13 | General Surgery

ROBOTIC TAKEDOWN OF TRANSORAL FUNDOPLICATION FOLLOWED BY ESOPHAGEAL REPAIR AND NISSEN FUNDOPLICATION: VIDEO

Michael Cutshall & Brian Davis

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Background: Gastroesophageal reflux disease (GERD) is a highly prevalent. Despite improvements in acid reduction medications, there remains a large segment of the population who require surgical modifications for symptom relief. Endoscopic approaches to GERD management have been developed such as the transoral incisionless fundoplication (TIF.) Early evidence shows promise for improving patient outcomes, however, the failure of this approach and subsequent management is not fully realized.

Objective: Early evidence shows promise for improving patient outcomes, however, the failure of this approach and subsequent management is not fully realized.

Methods: This video review describes the case of a gentleman with a history of GERD who had symptoms of heartburn with large and spicy meals. He underwent treatment with proton pump inhibitors with minimal relief. Surgical consultation at an outside hospital resulted in an uneventful transoral fundoplication procedure (TIF). Symptoms of refractory reflux occurred six months after the initial procedure. The patient was referred for recurrent refractory symptoms and esophageal impedance demonstrated significant acid reflux. The patient was consented for takedown of the TIF with possible repair of esophageal injury followed by hiatal hernia repair and Nissen fundoplication.

Results: EGD was performed at the time of surgery which demonstrated partial disruption of the previous fundoplication. The patient was found to have simple serosal adhesions around the site of the GE junction. There was significant evidence of scarring to the anterior left crura indicative of trauma from the previous TIF. Upon dissection of the left crus and release of the TIF fasteners a full thickness injury to the esophagus was discovered. The injury was investigated with endoscopy and repaired with running suture. The remaining TIF fasteners were removed and we proceeded with successful Nissen fundoplication 360-degree wrap. Endoscopy at completion of the case showed no evidence of further injury and no evidence of air leak. The patient was discharged on postoperative day 3. He was subsequently evaluated in clinic with resolution of reflux symptoms and has been followed without complication or complaints for 24 months.

Conclusion: This video highlights our own institution's experience using robot-assisted Nissen fundoplication for persisting reflux after failed TIF procedure. Simultaneous repair of esophageal injury can be done successfully without altering outcomes. TIF does not overall appear to increase the complexity or complications for future surgical intervention although exceptions have been noted. Future plans include collection of more data and long-term follow up to assess outcomes regarding efficacy and complications.

Video #14 | General Surgery

VIDEO ASSISTED RETROPERITONEAL DEBRIDEMENT FOR INFECTED PANCREATIC NECROSIS

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Background: The management of infected pancreatic necrosis requires a multidisciplinary approach including resuscitation, IV antibiotics, percutaneous drainage, and in most cases debridement of pancreatic necrosis. This pancreatic necrosectomy may be performed open, endoscopically, or as a video assisted retroperitoneal debridement (VARD).

Objective: To better understand the technique of video assisted retroperitoneal debridement for infected pancreatic necrosis.

Methods: Video presentation of a case of infected pancreatic necrosis managed with IV antibiotics, percutaneous drainage and a step-up approach using video assisted retroperitoneal debridement.

Results: This is a case of infected pancreatic necrosis that includes preoperative CT scans, placement of percutaneous drains, a set-by-step overview of video assisted retroperitoneal debridement, and finally a postoperative CT scan.

Conclusion: Video assisted retroperitoneal debridement is an essential skill for the management of infected pancreatic necrosis. This case presentation provides an overview of the technical aspects of this procedure.

Video #15 | Pediatric Surgery

THORACOSCOPIC REHBEIN PROCEDURE FOR TYPE B ESOPHAGEAL ATRESIA AND TRACHEOESOPHAGEAL FISTULA

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Background: Long-gap esophageal atresia can be challenging to manage. Multiple surgical procedures have been described with variable success. The Rehbein procedure was first described in 1971. Here we apply a minimally invasive approach using this technique.

Objective: To describe a thoracoscopic Rehbein procedure and outcome for a patient with type B esophageal atresia and tracheoesophageal fistula.

Methods: The patient's electronic medical records were reviewed and summarized. The operative procedure was recorded and edited.

Results: The patient was diagnosed with esophageal atresia at birth and initially underwent open gastrostomy tube placement and a contrast study demonstrating a long-gap atresia. Six weeks later she had a gap study, which re-demonstrated a long gap. She underwent a thoracoscopic Rehbein procedure. Two weeks postoperatively, she underwent planned esophageal dilation and a lumen was established. Long term, she developed an esophageal stricture for which she underwent multiple dilations and a laparoscopic Nissen fundoplication. She additionally has poor vocal cord abduction, which has not required intervention. She is now 8 months old and has begun to take feeds by mouth but remains dependent on gastrostomy tube feeds.

Conclusion: The thoracoscopic Rehbein procedure is a safe and feasible option for patients with long-gap esophageal atresia. Long term follow up and application in additional patients will be required to determine clinical outcomes.

Video #16 | Pediatric Surgery

Laparoscopic Excision of Intra Abdominal Extralobar Bronchopulmonary Sequestration

M. Ahn, K. Bowen-Jallow

Background: Congenital lung malformations are uncommon. The reported incidence ranges between 1 in 2,000 to 12,000 live births. The most common congenital lung malformations are congenital pulmonary airway malformation (CPAM) and bronchopulmonary sequestrations (BPS). In addition, hybrid lesions with components of two types of malformation might exist. The typical location is intrathoracic predominantly affecting the lower lung lobes. However, intraabdominal (subdiaphragmatic) locations can be encountered and are typically extralobar BPS. Intraabdominal BPS represent a diagnostic challenge and are difficult to differentiate from retroperitoneal tumors. Although these lesions can potentially be managed nonoperatively, surgical excision provides the benefit of a definitive histological diagnosis and is certainly indicated when symptoms are associated. Open resection is the most common approach for removal of intraabdominal BPS lesions. However, laparoscopy has been used in recent years. In this report, we present two cases of laparoscopic resection of intraabdominal extralobar BPS (IEBPS) along with a relevant and updated literature review.

Objective: To show the efficacy of the laparoscopic approach to BPS excision

Methods: Case series demonstrating laparoscopic excision of IEBPS

Results: Laparoscopic excision of IEBPS was successful with good patient outcomes in the two cases presented in this video series.

Conclusion: The mainstay of treatment is surgical excision of the BPS. IEBPS typically have a clear boundary separate from adjacent normal lung tissue. Excision of IEBPS at an age of 6 to 12 months is ideal. Laparoscopic excision is a less invasive treatment with shorter recovery time, minimal narcotic usage, and avoids associated complications, such as infection and malignant degeneration. The most serious surgical complication is intraoperative bleeding from abnormal systemic arteries supplying the mass and variable venous drainage. Other potential complications that have been reported include postoperative gastrointestinal fistulas due to unpredictable connections of the mass to the gastrointestinal tract. In selected asymptomatic patients, some pediatric surgeons might elect observation rather than surgical excision when managing congenital lung malformations. Although this practice has not been widely adopted in the United States, observation can be used in patients with non-cystic, small lesions. However, there is no consensus regarding the optimal duration and imaging modality to monitor these patients. The rate of surgical excision after initial observation has been reported to be as high as 80%. In addition, high individual and institutional variability in practice has been reported. These facts highlight the need for prospective studies that help us better define the patients that would benefit from surgery or observation. When surgery is elected, a laparoscopic approach is safe and feasible and should be considered.

Video #17 | Surgical Oncology

Prevention of Lymphedema

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Background: There are approximately 400,000 breast cancer survivors every year. About 3-5 million patients suffer from lymphedema. Statistics show that 1 in 5 women survivors with develop lymphedema. The presence of lymphedema varies with measurement technique, length of follow up, time to measurement, extent of surgery.

Objective: The objective was to determine lymphatic variations to within the axilla. The hypothesis was that axillary reverse mapping could facilitate identifying these anatomical variations and avoiding arm lymphatics within the axilla. This could reduce lymphedema rates in both sentinel lymph node biopsy and axillary lymph node dissection.

Methods: This IRB-approved study from June 2007 to December 2013 involved patients undergoing SLNB with or without ALND, or ALND alone. Technetium was injected subareolarly for localization of the breast SLN and isosulfan blue dye (5mL) was injected in the ipsilateral upper arm for localization of nonbreast lymphatics. Data was collected on identification and preservation of arm lymphatics, crossover rates, blue node metastases, axillary recurrence, and lymphedema as measured by volume displacement.

Results: A total of 654 patients prospectively underwent 685 ARM procedures with a SLNB and/or ALND. Objective lymphedema rates for SLNB and ALND were 0.8% and 6.5% respectively, with 26-month median follow up. Blue lymphatics were identified in 29.2% (138/472) of SLNB and 71.8% (153/213) of ALND. Crossover was seen in 3.8% (18/472) of SLNB and 5.6% (12/213) of ALND. Blue node metastases rate was 4.5% (2/44). Axillary recurrence rate was 0.2% and 1.4% for SLNB and ALND, respectively.

Conclusion: ARM allows increased identification of arm lymphatics in the axilla. This allows decreased transection during routine surgery. However, it could also be utilized to identify if a transection occurred and a reanastomosis of the lymphatic could be completed. Rates of metastases in noncrossover nodes and axillary recurrences are low. Lymphedema rates are dramatically reduced using ARM when compared with accepted standards.

Video #18 | Surgical Oncology

ROBOTIC ULTRA LOW ANTERIOR RESECTION WITH TOTAL MESORECTAL EXCISION FOR RECTAL CANCER

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Texas A&M Scott and White

Background: The well-performed ultra-low anterior resection with total mesorectal clearance has been shown to be the most important step in the treatment of a low rectal cancer. However, dissection and visualization can be challenging during operations deep within the pelvis. We present a 59 year old male with stage IIa (T3N0M0) ultra-low rectal cancer initially diagnosed on colonoscopy. Biopsy revealed moderately differentiated adenocarcinoma. On initial MRI, the mass was abutting the internal sphincter. Post neoadjuvant therapy MRI demonstrated partial response of his tumor without sphincter involvement.

Objective: We performed a robotic ultra-low anterior resection with total mesorectal excision and end to end anastomosis. In this video, we highlight important methods of exposure and dissection that are facilitated by a robotic surgical system. We focus on a medial to lateral dissection and demonstrate a complete total mesorectal excision.

Methods: We utilized a robotic surgical platform with standard 4 port technique compatible with the system. The patient underwent robotic ultra-low anterior resection with total mesorectal excision and end to end anastomosis.

Results: The patient recovered well from surgery and was discharged home on postoperative day 4. His final pathology demonstrated a small 0.5 cm foci of residual tumor invading the muscularis propria (T2N0M0). The mesorectum was intact. The distal margin was free of tumor by 1.0 cm and the radial margin by 0.5 cm. The specimen included fourteen benign nodes.

Conclusion: Robotic assistance facilitates improved dissection techniques allowing for ultra low anterior resection with complete total mesorectal excision.

Video #19 | Surgical Oncology

ROBOTIC TOTAL GASTRECTOMY FOR GEJ ADENOCARCINOMA

Naruhiko Ikoma MD MS

Background: Experience with robotic gastrectomy worldwide is currently in its nascence. Encouraging data for the use of robotic-assisted techniques in gastric surgery has been published, but further efforts to standardize techniques of robotic gastrectomy will improve safety of surgery.

Objective: The objective of this presentation is to demonstrate essential key points of robotic total gastrectomy.

Methods: A case is a 76-year-old male with 3.0 cm GEJ adenocarcinoma. He was diagnosed with cT3N0 disease, and underwent preoperative chemotherapy with a good clinical response. Patient underwent robotic total gastrectomy.

Results: Patient recovered well, and was discharged on POD#6 in good condition. Pathology showed ypT3N0 disease with 40 lymph nodes examined in the pathology. Adjuvant chemotherapy was recommended per standard.

Conclusion: Robotic total gastrectomy is an effective surgical option for GEJ adenocarcinoma with limited esophageal extension.

Video #20 | Vascular

ENDOVASCULAR REPAIR OF RUPTURED ACUTE TYPE B AORTIC DISSECTION

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Background: Type B aortic dissection is life-threatening condition associated with high morbidity and mortality. The presentation of type B aortic dissection is often a male patient in his 60's with a history of smoking and hypertension, that presents with the chief complaint of sudden sharp chest and/or back pain.

Objective: We present a video case report of an endovascular repair in an immediately post-partum female with a ruptured type B aortic dissection.

Methods: 31 y/o female presented as a transfer by air to our hospital for a thoracic aortic rupture. She had undergone an emergency C-section for fetal decelerations and contractions secondary to eclampsia at 38 weeks gestation 12 hours prior to transfer. At the outside hospital, she became hypotensive post operatively with subsequent workup including a CT chest/abdomen/pelvis with contrast demonstrating a type B aortic dissection originating just distal to the left subclavian through the bilateral common iliac arteries and a large L hemothorax. She arrived intubated and in hypovolemic shock. She was taken emergently to the operating room for repair.

Results: She underwent IVUS evaluation of her aorta to navigate the true lumen, followed by a thoracic aortogram demonstrating an area of obvious rupture in the mid descending aorta. A thoracic endograft (CTAG - W.L. Gore & Associates, Newark, DE) was deployed with subsequent angiogram demonstrating persistent bleeding from the false lumen. The IVUS was then used to navigate into the false lumen and an Amplatzer plug (Abbott vascular, Santa Clara, CA) was placed.

Conclusion: Completion aortogram demonstrated complete resolution of the rupture with no further extravasation of contrast. She received 6 units PRBCs, 6 Units FFP, and 4 units of platelets throughout her perioperative resuscitation. The patient's post-operative course was uneventful and she was discharged to rehab post-operative day #11.