

Abstracts from “The Society for Minimally Invasive Therapy” Third International Meeting

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C-45 Laparoscopic Treatment of Biliary Fistula

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With the development of minimally invasive surgery, cholecystectomy and closure of cholecystoduodenal fistula can now be performed laparoscopically. The following is a case report in a 72 year old white male who presented with sudden onset of central abdominal pain associated with vomiting. At initial presentation, his abdomen was distended and bowel sounds were hyperactive. Investigational radiology confirmed suspicion of acute intestinal obstruction. At surgery the small intestine was distended and a stone was found in the terminal ileum. Enterotomy was performed and the gallstone was removed. The enterotomy was closed. After a six week recovery period the patient underwent laparoscopic cholecystectomy and repair of the biliary fistula. After insertion of the trocars, examination of the intraperitoneal cavity revealed dense adhesions in the area of the gallbladder and the right lobe of the liver. A 5th trocar was placed in the subxiphoid space to insert a liver retractor. The adhesions surrounding the contracted gallbladder were divided and separated from the liver. The duodenum was identified. Meticulous dissection allowed identification of the fistulous tract communicating between the gallbladder and the first part of the duodenum. Using a counter traction technique and sharp dissection, the posterior aspect of the fistula was freed from the gallbladder. An Endo GIA stapler device (U.S.Surgical) was used to seal and divide the fistulous tract. A retrograde dissection of the gallbladder was performed until the cystic duct and artery were clearly defined and subsequently divided. The small contracted gallbladder was removed. A Jackson-Pratt was inserted into the subhepatic space. The patient was discharged on the first post operative day. With advances in instrumentation, complex laparoscopic procedures can now be performed.

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D-67 Endoscopic Lobectomy in an Experimental Model

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The application of endoscopic technology in the treatment of pulmonary lesions is likely to reduce patient discomfort and cost. Herein is described a technique for the treatment of pulmonary lesions via an endoscope. A pneumothorax is created on one side of the thorax by introducing a 10mm trocar in the lateral chest wall at the level of the fifth ICS. The endoscope is introduced through this 10mm trocar once the lung has collapsed adequately. The thorax is inspected and additional trocars are introduced under direct visualization. A 5mm trocar is introduced medial to the endoscope at the fifth and seventh ICS. Two 12mm trocars are introduced in the medial and lateral chest wall at the seventh ICS. A lung grasping device is inserted through the lateral 12mm port and the lower lobe of the lung is grasped and mobilized towards the diaphragm. An argon beam coagulator endoscopic handpiece (Beacon Labs) is introduced via the 5mm port and an endoshears (U.S. Surgical Corp.) is introduced via the 12mm medial port using a reducer. A technique of argon beam coagulation followed by fine scissor dissection is utilized to allow a layer by layer dissection of the lung tissue at the lateral aspect of the junction between the lower and middle lobes. Major vessels are clipped and divided. The dissection is continued until the bronchus and branches of the pulmonary artery and vein to the lower lobe are identified. An Endo GIA 30 stapling device (U.S. Surgical) is introduced through the medial 12mm port, placed across the bronchus, and branches of the pulmonary artery and vein and fired. The staple line is inspected. The instruments and trocars are withdrawn and the thorax is inspected. Puncture wounds are closed. The application of endoscopic technology to this procedure promises reduced cost, reduced patient discomfort and an earlier resumption of normal activities.

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D-72 Laparoscopically Assisted Total Colectomy

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A 24 year old female presented with dysfunctional megacolon. The laparoscope was introduced through a right upper quadrant port. Additional ports were introduced in the right lower quadrant, left upper quadrant and left lower quadrant. The colon was dissected free from the peritoneum, and hepatic and splenic flexures to permit mobilization. A second laparoscope attached to a light source was introduced via the left lower quadrant port. The mesentery was placed over this scope to outline the margins of the mesenteric vessels. The mesenteric vessels were dissected free, clipped and divided. An Endo GIA 30 stapling device (U.S. Surgical Corp.) was used to transect the rectum. A 3cm incision was made in the abdomen just above the pubic symphysis. The diseased colon was transected and the anvil of the CEEA stapling device (U.S. Surgical Corp.) was placed in the distal ileum. A purse string (U.S. Surgical Corp.) was applied to the ileum to anchor the anvil. The CEEA stapling device was introduced through the rectum and the trocar advanced. The trocar was disconnected from the CEEA instrument and carefully removed from the abdomen. The CEEA instrument was closed, fired and the anastomosis was visually inspected. The patient was discharged on post-operative day 4 and was able to resume normal activities within 6 days.

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Invited Speaker Patrick F. Leahy

D-73 Low Anterior Resection – An Endoscopic Technique

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Herein is presented a case of laparoscopic colon resection for the treatment of colon carcinoma. The patient was a 51 year old female presenting with painless rectal bleeding. Sigmoidoscopy revealed two polyps at 14cm and 15cm. Biopsy confirmed carcinoma. The laparoscope was introduced through a RUQ port. Additional ports were introduced in the RLQ, LUQ and LLQ. Simultaneous sigmoidoscopy and laparoscopy was utilized to determine the margins of the carcinoma, which were subsequently marked with a clip. The sigmoid colon was dissected free from the peritoneum and splenic flexure to permit mobilization. The colon was suspended using a silastic tube. A technique of transillumination was utilized to visualize the mesenteric arcade. The mesenteric vessels were dissected free, clipped and cut. An Endo GIA 30 stapling device (U.S. Surgical Corp) was used to transect the distal colon. The proximal segment was transected using another Endo GIA and the specimen was removed through a small incision in the abdomen. The proximal colon was passed up through the LLQ port and mobilized out of the abdomen. A purse string (U.S. Surgical Corp) was applied to the bowel and the anvil of the CEEA was inserted into the open bowel. The purse string was tightened to anchor the anvil and a suture was tied around it to allow easy location of the proximal colon within the abdomen. The CEEA stapling device was introduced through the rectum and the trocar advanced. The trocar was disconnected from the CEEA instrument and carefully removed from the abdomen using a specially designed grasping device. The CEEA instrument was closed, fired and the anastomosis was visually inspected. Additionally, saline was infused into the pelvis and positive pressure air was introduced in the rectum to inspect the sealing of the anastomosis. The trocars were removed and puncture wounds closed with a fascial stitch and steri strips. The patient was able to resume normal activities within 6 days.

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D-75 Laparoscopic Highly Selective Vagotomy in an Experimental Model

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Among the treatments available for management of peptic ulcer disease, highly selective vagotomy is an effective means of acid reduction, particularly if diet and/or drug therapy prove insufficient. Herein is described a technique utilizing new developments in laparoscopic technology and an argon beam coagulator to perform a highly selective vagotomy or seromyotomy. A five puncture technique is necessary to retract the liver and stomach and provide adequate exposure of the diaphragmatic crura. Pneumoperitoneum is achieved with CO₂ and a 10mm zero degree laparoscope is introduced just above the umbilicus. An 11mm trocar is introduced in the RUQ below the margin of the liver and a blunt liver retracting instrument is inserted. A 12mm port is placed in the upper left quadrant and a stomach retractor is inserted. The fundus of the stomach is grasped and mobilized downwards toward the pelvis. Two 5mm working channels are inserted just above and to either side of the scope. The nerve of Latarjet is identified and marked with a clip. The crus is incised longitudinally to the esophagus using an argon beam coagulator (Beacon Laboratories) followed by fine scissor dissection. The anterior branch of the vagus nerve is identified and retracted. The posterior vagus is identified and cut. An anterior seromyotomy is performed using the aforementioned alternating argon beam coagulation /scissor dissection technique along the lesser curve of the stomach down to the previously marked nerve of the Latarjet. Preservation of the nerve of Latarjet avoids the need for pyloromyectomy or pyloroplasty. This technique allows fine layer by layer dissection with minimal bleeding and excellent visualization of the surgical field. Human application is presently being investigated.

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