APS-01

Study of adult inguinal hernia postoperative pain caused by surgical procedures

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Background: The purpose of this study was to evaluate the postoperative pain of transabdominal pre-peritoneal repair (TAPP) versus that of the anterior approach (AA).
Methods: From April 2015 to April 2016, 55 adult patients with inguinal hernia were analyzed. To calculate the intrinsic degree of pain preoperatively, the values of minimum sensed current and the corresponding pain current were measured using a perceived pain analyzer (Pain Vision). Postoperatively, the wound pain level was calculated, and the wound pain ratio was determined from the intrinsic pain level and the wound pain level. We compared the wound pain ratio between the TAPP and AA surgical procedures. Significance was determined by a t-test.
Results: Of the 55 patients, 26 underwent TAPP and 29 underwent AA. The wound pain ratio on postoperative day 1 was 235.72±44.7 vs 199.59±42.93 (p=0.56) and on day 2 was 159.26±27.73 vs 144.02±26.26 (p=0.69), respectively. No significant difference was seen in the wound pain ratio between the two groups.
Conclusion: The results of the present analysis indicate that there is no significant difference in postoperative pain between the TAPP and AA procedures.

APS-02

Ultra-Pro Hernia System For Repair of Primary Complex Inguinal Hernia: Should it be the technique of choice?

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Purpose: Emergence of light weight 3D mesh devices showed outstanding results in inguinal hernia repair. Ultrapro Hernia System (UHS) is a partially absorbable bilayer mesh with only patch connected to inlay patch by a mesh cylinder connector. It leaves 65% less foreign material comparing to heavy weight meshes. It enables to reinforce pre-peritoneal space with minimal fixation, less post-operative pain, & rapid return to usual activities.
Methods: 75 male patients with complex primary inguinal hernia were submitted to open inguinal hernia repair using UHS (Ethicon, USA) between November 2013 and November 2015.
Results: Mean age was 46.1 years. 33 patients had inguino-scrotal hernias, 14 with Nyhus type IIIA, 22 with Nyhus type IIIB, 6 patients with strangulated hernias. Mean Operative time was 48 minutes. No operative complications were recorded. Post-operatively, the mean VAS scale on 1 day, 1 week, & 1 month was 3.64, 1.32, & 0.24 respectively. The mean duration of oral analgesics use was 2.4 days. None of the patients reported any chronic pain at 12 months post-operatively. Two superficial wound infections were recorded & treated by oral antibiotics (no surgical drainage needed). No recurrence occurred during mean follow up of 21 months.
Conclusion: Inguinal hernia repair using UHS is an effective technique combining advantages of anterior and pre-peritoneal approaches. It improves patient quality of life with less chronic pain and minimal recurrence rates. Longer follow up periods on more patients is needed for further assessment of long term results of UHS.

APS-03

How to do laparoscopic recurrent inguinal hernia repair in peritoneum insufficient case: a simple technique

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Background and Purpose: Recurrent inguinal hernia is technical challenging, especially for that after previous mesh repair, the mesh may implicate the peritoneum, which leads to peritoneum tearing or shortage for laparoscopic repair. Here we described how we deal with this problem.
Methods: Two cases recurrent direct hernias after previous mesh-plug repairs were treated with the transabdominal preperitoneal repair (TAPP) repair, during operation, we left the previous mesh in untouched, and dissected the peritoneum around the previous mesh, and enlarged the preperitoneal space, after peritoneum dissection, we found the peritoneum was not enough to cover the mesh, we completed dissected and reduced the large hernia sac, then a longitudinal incision was made to tailor the sac, which was used to compensate for the shortage of peritoneum.
Results: in these two cases of recurrent direct hernias, we avoided the dissection and removal of the previous mesh, and successfully performed the TAPP, avoid the usage of expensive anti-adhesive mesh, by the tailoring of the hernia sac, the shortage of the peritoneum conflicted by previous mesh could be compensated. And patients recovered uneventfully.
Conclusion: We believe it is a simple technique in suitable cases.

APS-04

The Transabdominal Preperitoneal (TAPP) Repair in the inguinal hernia Patient with Hemophilia A

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Laparoscopic hernia repair is recommended for inguinal hernias in patient because of most benefit such as less pain, excellent cosmesis, bilateral inguinal hernia, and so on. At the same time, Despite meticulous concentrated factor VIII and factor IX supply, Surgery in patients with inherited bleeding disorders is considered high risk and remains a challenge for surgeons. Laparoscopic hernia repair in patients with hemophilia is traditionally considered relative contraindication and report about that is very rare. We report a case with right inguinal hernia associated with hemophilia A. A 56-year-old married male suffered from hemophilia A for 30 years presented with a right inguinal hernia. This was repaired laparoscopically with a prothetic mesh (3D Max) using a transabdominal preperitoneal approach (TAPP). The patients had a good surgical procedure and blood loss was similar to that with normal coagulation, despite the patient with hemophilia stayed in hospital a little bit longer and hospitalization cost increased a lot because of the need to give him factor 8 infusions. We obtained a successful outcome during a 11-month follow-up period.

APS-05

Beware of the hyponatremia post inguinal hernia surgery

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Background: Hyponatremia is a common but often mistreated clinical situation. We hypothesize that the mechanism behind is most likely to be the sodium and water redistribution from the serum to the cells or the interstitial spaces due to the insufficient cortical steroid, not the sodium deficiency. As we have no reason to believe the patients have lost that much sodium which caused hyponatremia.
Methods: From January 2014 to March 2016, we studied 87 inguinal hernia patients who underwent Lichtenstein repair and experienced unexplainable hyponatremia with at least one of the symptoms including headache, nausea, vomiting, obstinate diarrhea and hypotension immediately post-surgery. All of the patients' serum sodium levels were perfectly normal prior to the surgery. Those aforementioned symptoms alleviated simultaneously and immediately with the serum sodium level restored after the hydrocortisone or prednisone was administered without any oral/intravenous sodium supplementation. We discuss the possible mechanism for hyponatremia in patients who are mostly likely to be adrenal insufficient rather than absolute sodium deficiency. The evidence supporting our hypothesis is that, (1) the serum sodium level does not always respond well to sodium supplementation; (2) the patients responded well to the hydrocortisone or prednisone therapy without any sodium supplementation; (3) patient with an elevated serum/urine cortisol level does not warrant him being adrenal sufficient.
Conclusions: Hyponatremia without significant loss of sodium can be used as an indicator to monitor the patients' adrenal function regardless of the serum/urine cortisol level. This hypothesis warrants further research of the adrenal function of the patients post-surgery.

APS-06

The effect of prophylactic oral antibiotics in the prevention of incision infection after tension-free hernioplasty

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Objective: To evaluate the effect of prophylactic oral antibiotics in the prevention of incision infection in patients received tension-free hernioplasty.
Methods: A total of 192 patients diagnosed with hernia between Sept. 2015 and Dec. 2015 at our institution were selected for this retrospective study. Patients with risk factors of incision infection, such as diabetes and obesity, were excluded. All patients received surgical treatment by the same surgeon, and were randomly given oral antibiotic for 48 hours after surgery. Patients were follow-up for one week in order to observe the incision status.
Results: One hundred and twenty patients, including 112 cases of male and 8 cases of female, adopted UPP mesh; of them, 60 cases received oral antibiotic treatment, and the other 60 cases did not take oral antibiotic, each group had 2 cases of surgical incision infection (3.33% vs. 3.33%). Another 72 patients were repaired with EadyProsthesis path, there were 1 case of incision infection in the 48 cases of patients those take oral antibiotic (2.08%); in the other 24 patients those did not received oral antibiotic, there were no cases of incision infection.
Conclusion: Prophylactic oral antibiotics could not decrease the rate of incision infection in hernia patients received tension-free hernioplasty.

APS-07

The effect of iliohypogastric nerve resection on postoperative pain after tension-free herniaplasty

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Objective: To explore the feasibility and clinical effect of iliohypogastric nerve resection on reducing postoperative pain in hernia patients received tension-free herniaplasty.
Methods: The clinical data of 640 patients with inguinal hernia underwent tension-free herniaplasty from July 2013 to July 2014 were retrospectively reviewed. Patients were divided into two groups according to whether they received iliohypogastric nerve resection. The postoperative pain were evaluated with VAS scoring system, and the score of two groups were compared and analyzed.
Results: Of the 640 patients, 348 cases (54.4%) received iliohypogastric nerve resection, and 292 cases (45.6%) did not. The mean operation time was 50±12.5min (30 - 65 min), the average length of hospital was 3±1.5 d (1-4d), and the follow-up time was 2 weeks. In the group of patients with iliohypogastric nerve resection, there were 130 patients got 0-points (37.5%), 43 patients got 1-points (12.4%), 44 patients got 2 points (12.6%), 87 patients got 3-points (25.0%), 44 patients got 4-points (12.6%), respectively, and no cases got 5-points or more. In the group of patients without iliohypogastric nerve resection, there were 51 cases got 0-points (17.5%), 84 cases got 1-points (28.6%), 6 cases got 2-points (1.9%), 68 cases got 3-points (23.4%), 53 cases got 4-points (18.2%), 28 cases got 5-points (9.7%), 2 cases got 6-points (0.7%), respectively.
Conclusion: Iliohypogastric nerve resection can reduce postoperative pain in inguinal hernia patients received tension-free herniaplasty.

APS-08

CLINICAL OBSERVATION OF ILIOHYPOGASTRIC NERVE AND INGUINAL DISSECTION IN TENSION-FREE INGUINAL HERNIOPLASTY

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Objective: The iliohypogastric nerve under the aponeurosis of external oblique was explored to provide the guide for the choice of the surgical procedures and mesh size in open tension-free inguinal hernioplasty.
Method: The consecutive observation of the iliohypogastric nerves under the aponeurosis of external oblique was made for 935 cases of open inguinal hernioplasty from 2007.12 to 2011.8, among which 297 cases of hernioplasty with 3.5cm-wide meshes and 638 cases of hernioplasty with 5.5cm-wide meshes. The iliohypogastric nerves were observed in the space extending from the internal ring to the pubic tubercle in length and from the reflex of the inguinal ligament to the position 3.5cm, 5.5cm vertically above the inguinal ligament in width respectively.
Result: The iliohypogastirc nerves were observed in 386 cases (41.3%) of the total 935 inguinal hernioplasties, during which 78 cases (26.3%) in 297 hernioplasties with 3.5cm wide meshes and 308 cases (48.3%) of 638 hernioplasties with 5.5cm wide meshes, with the former significantly lower than the latter (statistically significant, P0.001).
Conclusion: For open inguinal hernioplasty, the wider the separation of the space under the aponeurosis of external oblique, the higher the possibility of the exposure of and injuries to the iliohypogastric nerve as well as the requirement for the proper management of the nerve and mesh. Although inguinal hernioplasty with large mesh could reduce the post-operation recurrence rate, the possibility of injury to the nerves in operation will increase.

APS-09

Application of Ultrapro Hernia System in Preperitoneal Hernioplasty for Inguinal Hernia

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Objective: To investigate the application and efficacy of partially absorbable ultrapro hernia system (UHS) in preperitoneal tension-free hernioplasty.
Methods: The clinical data of 89 patients undergoing preperitoneal tension-free hernioplasty by applying UHS for inguinal hernia from 2014 were summarized.
Results: All 89 patients were cured; the duration of surgery ranged from 40 to 90 min with a mean duration of 70 min. As for postoperative complications, retention of urine was detected in 2 patients, incision infection in 1 patient, seroma in 2 patients, slight incision pain was found, and no obvious foreign body sensation, scrotal hydrocele or hematoma of the scrotum was observed. Patients left hospital 3-5 days after surgery. No recurrence occurred in the 3-month to 2-year follow-up.
Conclusion: By applying partially absorbable UHS in preperitoneal tension-free hernioplasty for inguinal hernia, the patch could completely cover the myopectineal orifice, the anterior and posterior walls of abdominal transverse fascia were improved, foreign body retention was low, and the incidence of chronic pain was low; therefore, preperitoneal tension-free hernioplasty applying UHS is an ideal method to treat inguinal hernia.

APS-10

Lichtenstein tension-free hernioplasty repair in adult patients with De Garengeot hernia

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To investigate the preoperative management and the clinical effecciency of Lichtenstein tension-free hernioplasty in an adult patient with De Garengeot hernia.

APS-11

Two cases of early recurrence after transabdominal preperitoneal (TAPP) inguinal hernia repair

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We performed transabdominal preperitoneal (TAPP) inguinal hernia repair on 58 patients. Of these patients, 2 experienced recurrence within three months of the surgery. The purpose of this study was to analyze the cause of this early recurrence after TAPP.
Case 1 was a 76-year-old male who underwent TAPP (Bard 3DMax Light) for bilateral inguinal hernia (I-2, both sides). The recurrence was diagnosed 1 month after surgery. A second surgery was performed using the anterior approach method. The mesh had dislocated to the lateral side with kinking in the internal cranial side. We repaired it using the Direct Kugel method.
Case 2 was a 79-year-old male who underwent TAPP (Bard 3DMax Light) for bilateral inguinal hernia (left: IV (I-2+II-2); right: II-3). It was difficult to exfoliate the peritoneum due to omental adhesion after appendectomy. The recurrence was diagnosed three months after surgery. A second surgery was performed using the anterior approach method under laparoscopic observation. The mesh, which was fixed with Cooper's ligaments, had dislocated to the lateral side and was slipping off. We repaired it using an ULTRAPRO Plug.
It has been reported that recurrence after TAPP is more common on the internal side and it has been suggested that sufficient exfoliation and a large enough mesh are important to prevent such recurrence.
We believe that the recurrences in the present cases were due to insufficient internal exfoliation and fixation, though the recurrence in Case 2 resulted from the complicated exfoliation of the preperitoneal space due to omental adhesion.

APS-12

A case of chronic postherniotomy pain treated by genitofemoral neurotomy with a laparoscopic transabdominal approach

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A 66-year-old man, who underwent anterior mesh plug hernia repair at our clinic for the right direct inguinal hernia 6 years previously and anterior mesh plug hernia repair for the recurrent right inguinal hernia 6 months previously, re-visited our clinic due to occasional right inguinal pain. This symptom became refractory and severe year by year, and was especially exacerbated by the lifting heavy goods or standing for long periods. According to a physical examination, the patient's pain was supposed to have originated from the genitofemoral nerve given the direction of neuralgia which radiated downward to the genitalia and inner aspect of the thigh. After 5 years, analgesics failed to relieve the pain, and we planned an operation comprising inguinal hernia repair and genitofemoral neurotomy with a laparoscopic transabdominal preperitoneal approach under the diagnosis of genitofemoral neuralgia with recurrence of inguinal hernia. Recurrence of hernia was not found during the operation, and the patient underwent neurotomy of the genitofemoral nerve and preperitoneal reinforcement of the lateral area using mesh without removal of the mesh-plug that had been placed on the medial side in a previous operation. One month after the operation, right inguinal pain disappeared except for slight tenderness around the operative scar. With the anterior approach, iliohypogastric and ilioinguinal nerves are easily accessible, but the genitofemoral nerve is difficult to detect and manipulate, especially postherniotomy. A laparoscopic transabdominal approach has the advantage over an anterior approach in providing access to the genitofemoral nerve.

APS-13

Post operative pain following Totally Extraperitoneal Laparoscopic Inguinal Hernia Repair - Self Gripping Mesh Vs Staple Fixation: A Prospective Double Blinded Randomized Controlled Trial An interim Result

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Background: Laparoscopic totally extraperitoneal (TEP) repair of inguinal hernia has been a standard of care for inguinal hernias. A recently introduced self gripping mesh (SGM) which does not require staple fixation(SF) has been shown to reduce post operative and chronic pain in open inguinal hernia repair. This ongoing study aims to compare the post operative pain outcomes in TEP repair.
Methods: A randomized controlled patient and evaluator-blinded study was conducted in patients with uncomplicated unilateral inguinal hernia in our centre from December 2015 to August 2016. Patients were randomized to either receive a SGM (ProGrip) or a light polypropylene mesh fixed with stapler (ProTack). Main outcomes measured were pain score on Visual Analogue Scale (VAS) at 1 hour, 1 day and 2 weeks post operation.
Result: A total of 27 patients were recruited and analysed so far. 12 were randomized to SGM and 15 to SF. The mean length of the procedure was 78.8 min in the SGM group and 79.3 min in the SF group. The mean preoperative pain values scored by VAS at post operation 1 hour, 1 day and 2 weeks (SGM vs SF) were 5.0 vs 3.7(p=0.43), 2.9 vs 3.3(p=0.55) and 2.0 vs 1.8(p=0.63) respectively. There are no post operative complications or recurrences reported so far.
Conclusion: At interim analysis there was no difference in pain score of the patient post operatively using either SGM or SF in TEP repair.

APS-14

Omental torsion caused by incarcerated inguinal hernia: report of a case

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Background: Torsion of the greater omentum (OT) is a rare condition in the literature.
Presentation of a case: A 44-year-old male presented at our institution complaining of right quadrant pain, and acute appendicitis was suspected on physical examinations. CT demonstrated a fat density mass in the left groin continuing intraabdominally to form a whorl-like stratified structure. A diagnosis of OT due to left incarcerated inguinal hernia was obtained, and an emergency surgery was performed. On entering the peritoneal cavity through a midline incision, the omentum was found to be twisted and necrotic. The omentum continued into the left inguinal hernia sac and was incarcerated. Hernia content was reduced, and the omentum was resected. His postoperative course was uneventful.
Discussion: OT is classified into two groups, primary and secondary. Inguinal hernia is the most common cause of secondary OT. Although OT is rarely reported, the diagnosis can be established preoperatively because of its characteristic CT findings.
Conclusion: OT should be considered in differential diagnosis of acute abdomen.

APS-15

A randomized clinical study on postoperative pain comparing the supraglottic airway device in TAPP

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Background: Transabdominal preperitoneal (TAPP) repair is the most widely used laparoscopic technique for the treatment of inguinal hernia in Japan. Many studies have shown that in comparison with open hernia repair, laparoscopic repair results in less pain and a shorter convalescence. However, postoperative pain remains a concern. One possible cause of postoperative pain in the early postoperative phase is strain or cough on removal of the endotracheal tube. Use of a supraglottic airway (SGA) device helps to avoid such complaints. We evaluated postoperative pain after TAPP repair using the SGA for general anesthesia.
Methods: We evaluated the postoperative pain in 144 patients with inguinal hernia repaired by TAPP in our hospital between May 2013 and May 2016. All patients who underwent needlescopic TAPP surgery were randomly allocated to one of two groups of 72 patients: group A (SGA), in which the patient's airway was secured with an appropriately sized I-gel, and group B (endotracheal tube), in which the airway was secured under laryngoscopy.
Results: There was no significant difference between the groups regarding patient background, postoperative hospital stay and operation time. In the analysis of postoperative pain, the mean Numerical Rating Scale score of peak pain in group A was significantly less than that of group B (2.10±2.05 vs 2.90±2.65; p=0.043), and the level of postoperative pain in group A tended to decrease earlier than that in group B.
Conclusions: The results of this study are the first to show that an SGA device can reduce postoperative pain.

APS-16

An Omental Fibroma Resembling a Testicular Tumour but Presented as an Irreducible Inguinal Hernia: a Case Report

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We present a case of omental fibroma, which posed a surgical diagnostic dilemma. Primary tumours of the omentum are uncommon, and omental fibromas account for 2% of these. The rarity of omental fibroma and paucity of available information hamper an accurate diagnosis. In this particular case, the diagnostic process was misleading. The history was classical of an irreducible inguinal hernia, but the physical examination and imaging studies were suggestive of a testicular tumour. However, intraoperatively, an omental tumour and a normal testicle were found in the scrotum. Histopathological examination proved the tumour to be a fibroma. The presentation of an omental fibroma in an inguinal hernia sac had never been reported in literature. Due to the rarity of such cases, a thorough history, detailed examination, and objective investigation are the pillars to attain the correct diagnosis.

APS-17

Laparoscopic treatment of diaphragmatic defect and chronic intra-thoracic gastric volvulus

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Gastric volvulus is an uncommon disease condition that affects mostly the elderly. It occurs mainly as a result of congenital laxity of ligament attachments of the stomach. It is also accompanied by a diaphragmatic hernia. This sometimes causes the stomach herniation into the thorax, giving rise to respiratory compromise, herniated part ischemic or gangrenous change. This disease could present as acute or chronic condition. We have managed 16 patients with diaphragmatic hernia and chronic intra-thoracic gastric volvulus under laparoscopy over the past thirteen years; all patients are of secondary type. Twelve (12) patients belong to organoaxial type and four (4) were mesenteroaxial type. Elective surgery was performed for all these patients. All patients recovered well from surgery without evident complications. Most of their hospital stays were five days. After operation, patent gastrointestinal tract was noted in all patients. Besides, all patients showed improvement of pulmonary condition after surgical correction of anatomic anomaly. Even though worldwide experience in laparoscopic surgery for diaphragmatic hernia and chronic intra-thoracic gastric volvulus is limited, our results are encouraging. Based on our experience, laparoscopic technique seems to be safe and feasible in treatment of this disease.

APS-18

Preoperative Inguinal Evaluation by Imaging Studies performed for Radical Retropubic Prostatectomies

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Purpose: Patients who underwent radical retropubic prostatectomies (RRPs) have an increased risk of developing inguinal hernias (IHs). However the exact role of RRP in hernia development is still controversial. Subclinical IH which was not diagnosed before RRPs may contribute to develop post-RRP IH. The aim of this study is to evaluate inguinal status to identify subclinical IH before RRP using preoperative imaging studies such as CT or MRI.
Methods: From Jan. 2012 to Sep. 2015, 125 patients underwent RRPs at department of urology, Chungbuk National university hospital. Preoperative abdomino-pelvic CT and/or MRI studies were available in all patients.
Results: Twelve patients (9.6%) underwent inguinal hernia repairs during the mean follow-up period of 30.8±13.2 months after RRPs. Subclinical IH can be diagnosed in 6 patients (4.8%) and suggested in additional 5 patients (4.0%). Patients who underwent hernia repairs were older than those who did not ($p<0.05$). Among 6 patients with subclinical IHs, only one patient was diagnosed before RRP and treated by TEP-like mesh repair at the same time. Additional 2 patients required hernia repairs after 5.5 and 21.8 months after RRPs respectively.
Conclusion: Post-RRP IHs do not develop infrequently. Careful evaluation of inguinal status to identify subclinical IH before RRP using preoperative imaging studies might decrease the incidence of post-RRP IHs.

APS-19

The hybrid repair for recurrent inguinal hernias using laparoscopic technique

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Background: Recurrent groin hernia is a common problem around the world every all through the ages. The "operated-again" patients undergo hernioplasty with a mixture of expectation and anxiety. Therefore, second-operation must be performed reliably and accurately. However, the level of second-operation could be high comparing with initial operation, and the frequency of re-recurrence and complications are problem. The difficulty for re-operation is according to inaccurately record, inadequate follow-up, various methodology and unknown of anatomical and layer structure.
Purpose: To investigate recurrent inguinal hernia and report the easy-technique of the hybrid repair using laparoscopy.
Result: The last two years, 86 hernia repair were performed and 10 cases(11.6%) of recurrent hernia repairs. The average time to recurrence 14.3 years (median; 7.5years/ 8 months-50 years), Average age was 79.6 years-old (57-96), all case were males. Average operation time was 117min (Anterior / TAPP / Hybrid-plug=120/134/97 min, p=0.667). In method, under pneumoperitoneum, skin is incised just above the hernia bulging, recurrent hernia orifice is recognized shortly. Surgical mesh & plug are put on the sac.
Discussion: Under pneumoperitoneum, land mark of inguinal repair "Inferior epigastric vessel", "Medial umbilical fold" and "Copper ligament" recognized easily. Furthermore, the post-operative influence "adhesion to intestine", "degree of adhesion to prostheses" were revealed briefly. We can diagnose pattern of recurrent hernia and evaluate "hernia orifice" exactly.
Conclusion: We reported easy-technique of the hybrid repair using laparoscopy for recurrent hernias.

APS-20

Cases report of 678patients with inguinal hernia treated by Litchenstein hernia repair

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Objective: To summarize the clinical efficacy and value of the Litchenstein hernia repair in the treatment of patients with inguinal hernia.
Methods: A total of 678 patients with inguinalhernia were enrolled in The xinjiang autonomous region people´s hospital from march 2005 to march 2015. The Lichenstein method was applied; The operation time, postoperative pain, complications and recurrence rate were analyzed retrospectively.
Result: All the cases had operated successfully.The operation time was 35 to 105 minutes, with a mean of (54±5) minutes. The hospital stay was 4 to 9 days, with a mean of (5±1) days, Wound infection was observed after operation in 14cases of chronic pain, 1 7 cases of acute urinary retention and 1 case of patch infection. All patients were followed up for 6 to 72 months, Recurrences were observed in 4 of 678.
Conclusion: The Lichenstein hernia repair owns strengths of short-time, light pain,low recurrence rate, and less complicatios;which is effective in treatment of patients with inguinal hernia.

APS-21

Suture Site Hernia and Needle-Loop: A new and convenient way to potentially reduce the incidence of an underreported type of incisional hernia

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'Suture site hernias' resemble rare incisional hernias that can occur at weakspots of the abdominal wall caused by transfascial sutures used to secure the implant's position with filaments during laparoscopic IPOM-repair. After their first description in 2006 only 3 more actual cases were reported in literature. Since the technique is still widely used, the entity appears hugely underreported. One of our own cases clearly showed a defect between the suture channels and the center of the mesh that cannot be explained by local ischemia or tension related to postoperative reduction in implant size by scarring effects alone. Instead it is our understanding that intraabdominal pressure in combination with the original fascia defect caused by the large caliber device used to pass the fixation suture through the fascia contributes to the manifestation of this type of hernia. Similar defects have been described as a source of recurrence by other authors with regard to primary fascial closure of midline incisions and have led to the use of smaller needles and thinner filaments in that field. We hence developed the new, cheap and readily available technique to pass fixation sutures through the smallest possible defects in the abdominal wall where necessary, thereby reaching a near five-fold reduction in initial defect size.

APS-22

Inguinal Hernia With Tuberculous Peritonitis: A Case Report and Literature Review

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A rare case of inguinal hernia with tuberculous peritonitis is described, as well as a review of the pertinent literature. A 56-year-old male patient admitted to our emergency department because of reducible mass presenting in his left inguinal region. After preoperative preparation, we did a laparoscopic totally extraperitoneal hernia repair (TEP) for this patient. During TEP, we unexpectedly found tuberculous peritonitis, which was confirmed by postoperative pathology. With this case report and review, we hope the relevant knowledge about such rare situation, the inguinal hernia coexist with tuberculous peritonitis, could be augmented, and helps might be offered on early diagnosis and treatment of abdominal tuberculosis.

APS-23

Successful repair of a bladder herniation after old traumatic pubic symphysis diastasis using polypropylene mesh with tissue growthing graft and hernia mesh

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Bladder herniation associated with pubic symphysis diastasis is a very rare condition. We report a case with bladder herniation after traumatic pubic symphysis disruption. A 47-year-old man was admitted to our hospital complaining of under abdominal pain and reversible mass for 11 months in July of 2011. Eighteen months earlier the patient was treated with open Urethral reunion operation and jejunostomy procedure and definitive internal fixation of the pubis. Then, 2-month late, Open incisional hernia patch repair and jejunostomy closed surgery had been carried out. We used a polypropylene mesh with tissue growthing placed of previous surgery for closure of the diastasis and a prolene and a polytetrafluoroethylene mesh graft and for supporting the abdominal wall.some authors have closed chronic pubic diastasis with bladder herniation using a tibial corticospongiose or bone graft. Our surgical procedure is different from others because of the use of polypropylene mesh with tissue growthing. We obtained a successful outcome during a 5-year follow-up period.

APS-24

Perineal hemangioma misdiagnosed as perineal hernia: Two cases report

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Background: Perineal hemangiomas are nonmalignant vascular tumours that occur on the perineum. Perineal hemangiomas which arise in the subcutis or reticular dermis appeared as raised soft masses, and some of its clinical presentation is similar to perineal hernia. These protrusions were often mistaken for perineal hernia. The purpose of this article was to describe the imaging findings and illustrate the differential diagnosis.
Cases: Two patients presented as adult female with perineal hemangiomas which its clinical feature is mostly alike perineal hernia. The first patient had a perineal hemangioma involving the rectal and vaginal walls. The second patient had only a hemangioma located to the left of the vulva. Diagnoses were secured by color Doppler ultrasonography (CDUS) and magnetic resonance imaging (MRI). Both patients were successfully treated by interventional sclerotherapy.
Conclusions: Imaging examinations are essential to make a differential diagnosis between perineal hernia and some of perineal hemangiomas. Knowing the features of perineal hemangiomas on CDUS and MRI supports confident diagnosis.

APS-25

Internal double omental hernia: report of a case and literature review

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Objective: To investigate diagnosis and treatment of internal double omental hernia.
Methods: Retrospectivly analysed one case of internal double omental hernia, and reviewed the literatures.
Results: This case was diagnosed by clinical manifestations and radiological images, then emergency laparotomy was performed. The patient recovered well without complications.
Conclusion: Internal double omental hernia should be combined clinical manifestations with radiological images to make the diagnosis, and once the diagnosis has been determined, emergency laparotomy should be performed.

APS-26

The disposal and therapeutic evaluation of femoral hernia found in TAPP or TEP operation accidentally

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Objective: To discuss the disposal of femoral hernia found in TAPP or TEP operation accidentally and evaluate the operation therapeutic.
Methods: 13 patients were diagnosed as inguinal hernia before operation but then confirmed as femoral hernia in the operation, then still mending the coloboma by TAPP or TEP after clearly diagnose.
Results: The operation time is in 63~80 min, mean time is 72min. The length of stay is in 3~7d, 5d in average. No complication, such as incision infection, bleeding, fat liquefaction or abnormal sensation, was appeared. The follow-up periods is in 6~18 months, and no relapse case.
Conclusion: When adopt the same surgical method to deal with femoral hernia found in TAPP or TEP operation accidentally, there was not prolong the operation time, and the hospital stay is short, patients' postoperative recovery is quickly, the complication and recurrence rate is lower. So it has reliable therapeutic effect in clinic and it is deserve to generalize.

APS-27

Solo Single Incision Laparoscopic Totally Extraperitoneal Inguinal Hernia Repair: Initial experience

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Background: This study aims to introduce and assess the safety and feasibility of solo laparoscopic totally extraperitoneal (Solo TEP) inguinal hernia repair using a laparoscopic scope holder.
Methods: Between October 2013 and November2014, 15 Solo TEP were performed at Seoul National University Bundang Hospital, with the use of a commercial glove single-port device and a laparoscopic scope holder (Laparostat, CIVCO, Iowa), which can prevent the clashes between the operator and scopist, and also maintain stable field view. We used a 2cm tangential umbilical incision and a 5mm flexible scope with conventional laparoscopic instruments. All procedures were manipulated by the operator. We routinely performed SS-TEP in day surgery.
Results: Of 15 hernias treated, 8 were right inguinal hernias, 7 were left inguinal hernias. There was no conversion to conventional TEP. Mean operation time was 34 minutes (range, 25 to 55 minutes). There were no intraoperative events. Postoperative complications occurred in one cases (wound infection) and were conservatively treated. There was no hospitalized patients after surgery.
Conclusion: In this experience, we demonstrated that SS-TEP is feasible and Laparostat could be a good alternative to a human scopist. However, further experience and well-designed studies are required to confirm the safety and feasibility of this technique.

APS-28

Bilateral inguinal hernia after axillary-femoral artery bypass effectively treated with Transabdominal preperitoneal (TAPP)

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We report herein our experience with bilateral inguinal hernia surgery for a patient who underwent a Y-shaped vascular graft for an abdominal aortic aneurysm, followed by the addition of right axillary-bilateral femoral artery bypass surgery. Preoperative physical examination and imaging revealed a subcutaneous vascular graft passing from the right axilla through the right flank region, and branching at the lower abdomen to reach the femoral areas on both sides. As repair surgery by inguinal incision was considered difficult, we performed laparoscopic surgery. Bilateral direct hernia was observed on intraperitoneal observation. Essentially no intraperitoneal organ adhesion to the abdominal wall was present, and the previous surgery was also confirmed not to have reached the inguinal preperitoneal space. Transabdominal preperitoneal repair (TAPP) was therefore performed, yielding favorable results.

APS-29

Synchronous bilateral groin hernias are not always of the same type: An analysis of 1005 cases during 10 years

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Purpose: It is perceived that synchronous bilateral groin hernias are usually of the same type. However, few studies have reported. The aim of the present study is to clarify this point.
Methods: One thousand five patients underwent groin hernia repair between January 2006 and June 2016. Hernia types (I to V) were determined based on the Japan Hernia Society hernia classification. Regarding bilateral groin hernias, we categorized the combination pattern: "the same", "partially the same", and "different".
Results: Of 1005 cases, 70 males and 2 females simultaneously received bilateral repair. The same pattern was observed in 51 cases (bilaterally type I: n = 19; bilaterally type II: n = 28; bilaterally type IV (I + II): n = 3; bilaterally type IV (II + III): n = 1). Partially the same pattern was noted in 12 cases (combination of I and IV (I + II): n = 4; combination of II and IV (I + II): n = 6; combination of II and IV (II + III): n = 2). Different pattern was identified in 9 cases.
Discussion: The frequency of bilateral groin hernias was 7% (72/1005). The percentage of the same, partially the same, and different patterns was 71% (51/72), 17% (12/72), and 12% (9/72). In conclusion, caution should be taken since bilateral inguinal hernias are not always of the same type.

APS-30

Chronic pain after laparoscopic ventral hernia repair

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Purpose: In this report, the pain scale and characteristics of post operative pain after laparoscopic ventral hernia repair are examined through a clinical review of patients that have undergone laparoscopic ventral hernia repair.
Methods: A retrospective case series of eighty three patients that underwent laparoscopic hernia repair for an ventral hernia. The patients underwent follow-up with a physical examination and telephone interview.
Results: A total of eighty three laparoscopic ventral hernia repair procedures in all patients were successfully performed without conversion to open surgery. The mean postoperative hospital stay was six days Postoperatively, fifteen cases of post operative ileus, eleven cases of wound seroma, one case of hematoma, thirty five cases of chronic discomfort were noted, but there was no significant major morbidity or mortality. Average pain from postoperative day measured on a visual analogue scale (VAS) was fifty. Chronic pain occurred in ten patients, which was mild pain in seven patients and moderate in three patient. There were no recurrences in all of the patients during the follow-up period from one to twenty months. sixty four patient were satisfied with their results.
Conclusion: Laparoscopic ventral hernia repair is a safe and effective procedure to repair ventral hernias with minimal morbidity and recurrence, but chronic discomfort and pain was occured frequently.

APS-31

Is it essential to confirm routine pathologic examination in adult inguinal hernia?

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Background: Some study suggested that routine histologic examination on hernia sac is necessary because there are several incidental findings can be found. However, hernia sac resection has become an additional step in tension-free repair such as plug mesh method or laparoscopic herniorrhaphy which are dominant methods in inguinal hernia repair. Therefore it is necessary to confirm the efficacy of routine pathologic examination.
Methods: We reviewed retrospectively 406 people who got surgery on inguinal hernia by a single surgeon for 3 and a half year from July 2010 to December 2013.
Results: 406 people were reviewed and 25 people had bilateral inguinal hernia, and 164 specimens(38%) were pathologically examined. Abnormal pathologic finding was found in 4 patients (0.9%), however all of them were suspicious other diagnosis rather than consistent of hernia sac intraoperatively. Finally, the rest were consistent of hernia sac. Additionally, gross findings of lipomas were later pathologically examined and confirmed as lipomas in all cases.
Conclusion: Routine pathologic examination of inguinal hernia sac is not essential to diagnosis. Performing pathologic examination is necessary only when the grossly abnormal findings were found.

APS-32

A case of liposarcoma of the spermatic cord masquerading as an inguinal hernia

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We report a case of liposarcoma of the spermatic cord. A 42-year-old male patient presented with a painless left inguinal mass. CT (computed tomography) showed a fatty mass in the left inguinosacrotal region and was interpreted as a left inguinal hernia containing omentum protruding into scrotum. Under general anesthesia, a laparoscopy was performed and the lesion was diagnosed of type II-3 (JHS classification) hernia with giant sacless lipoma of the spermatic cord. The hernia was repaired by TAPP methods. But, the adipose lesion was connected to the testis. Additionally, partial resection of the lesion was done by anterior approach. Histopathological examination and immunohistochemistry revealed a well-differentiated liposarcoma. In 6 months after the first operation, the residual tumor was removed with the left spermatic cord and left testis. Spermatic cord liposarcoma is a rare condition and liposarcomas are most commonly found in the retroperitoneal space and the extremities, and less often in the head and the neck area. The spermatic cord is a rare area of the origin as about 3-7% of all liposarcoma. Imaging studies only may fail to distinguish a liposarcoma from normal adipose tissue.

APS-33

Incisional Ventral Hernia post mesh repair complicated with enterocutaneous fistula successfully treated with Biosynthetic Mesh Materials: A case report

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Within the last few years, the use of meshes has become standard procedure in hernia repair surgery throughout the world. Mesh-related infection is a huge challenge because it causes great morbidity and increases the overall cost of treatment due to the often needs of repeated submission and intravenous antibiotics injections. In more severe cases, re-operation, drainage or debridement might be warranted.
We present an 86 years old male patient who underwent prosthetic mesh (composite two layers mesh with polypropylene and ePTFE) repair for abdominal incisional hernia which later complicated with infection. Multiple debridement procedures were performed with wound infection and formation of entero-cutaneous fistula. This complicated situation was finally being treated successfully with re-operation to remove the infected mesh and replaced with biosynthetic mesh (Biodesign)
After two years follow up, no wound infection developed and no hernia recurrence occurred.

APS-34

The noble technique of laparoscopic herniorrhaphy for indirect inguinal hernia: Laparoscopic Intracorporeal posterior wall repair

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Objective: To evaluate the efficacy of intracorporeal posterior wall suture repair technique of laparoscopic indirect inguinal hernia repair.
Background: High ligation without posterior wall repair is the gold standard procedure in the treatment of pediatric inguinal hernia while posterior wall repair is necessary in adults. TAPP and TEP are the common laparoscopic inguinal hernia repairs in adult patients. Disadvantages of using the synthetic mesh and dissecting wide peritoneal area include high cost and a risk of chronic pain.
Method: Laparoscopic herniorrhaphies had been performed on 640 adult patients (over 20 years old) diagnosed with indirect inguinal hernia from July 1st, 2012 to December 31st, 2015. Of 640 patients, 88 patients underwent conventional TAPP with mesh (group #1) and 552 patients underwent intracorporeal posterior wall suture repair instead of using synthetic mesh (group #2).
Results: The mean operation time and hospital stay were both significantly shorter in group #2 than group #1 ($p<0.001$). There were 3 recurrent patients in group #2 while there was only one recurrent patient in group #1 due to the displacement of mesh, but these results show no statistical significance.
Conclusion: Intracorporeal posterior wall suture repair technique without using mesh might be the optimal choice of the laparoscopic indirect hernia treatments for adult patients as it has potential benefits of saving health care resources and reducing complication risks associated with the use of mesh.

APS-35

Our experience of treatment for incisional hernia of abdominal wall in the region; Laparoscopic vs Open method

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In recent years an aging society in Japan, has come a growing medical needs in the region.
The elderly has a number of surgical diseases, also, often the need for emergency surgery.
After surgery in the elderly is seen abdominal wall hernia, it is necessary to hernia surgery. To hernia surgery in addition to the conventional open surgery, in recent years there is a surgery laparoscopically.
Experienced this time laparotomy 4 cases and laparoscopic surgery five patients, were compared two methods.
Laparotomy cases compared to laparoscopic surgery, but surgery time was shorter period of time, it was longer hospital stay.
For the elderly, more of laparotomy is a minimally invasive rather, seemed to wish to long-term hospitalization.

APS-36

PROSPECTIVE COMPARISON OF SINGLE PORT VS. MULTIPLE PORT LAPAROSCOPIC TEP HERNIOPLASTY FOR RECURRENT INGUINAL HERNIA

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Objectives: Single port laparoscopic hernioplasty (LH) have rarely been used in recurrent inguinal hernia. We report our experience of single port LH for recurrent inguinal hernia and compare its early results with multiple port LH.
Methods: From Jan. 2010 to March 2014, we totally performed 32 single port LH through TEP approach using homemade (Uen) port for recurrent inguinal hernia, classified as direct (n=26) and indirect (n=6) type. Uen port is constructed with a segment of corrugated elastic tube and three 10 mm trocar connected to the thumb and 3 digits of a double layered surgical glove. The enveloped elastic tube was inserted through an umbilical incision into preperitoneal space after adequate ballonning. The operation procedures were performed with standard laparoscopic instruments with mannually curved shaft in the manner the same as multiple port, and a 10X15 cm mesh was deployed over MPO with Protec fixation. Surgical outcomes were compared with 32 three port LH for recurrent inguinal hernia.
Results: There was no significant difference ($p > 0.05$) between multiple vs. single port LH in patients' characteristics, failure rate, morbidity rate, postoperative pain score and analgesics requirement and short term recurrence rate. Single port LH with inapparent surgical scar in the umbilicus, however, its operation time is significantly longer than three port LH ($p < 0.05$).
Conclusion: Single port LH can be successfully and safely completed for recurrent inguinal hernia with Uen port and traditional instruments. Its cosmetic result is impressive, however, its operation time is significantly longer.

APS-37

Infected hernia meshes: A spectrum of management options

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Case I: A 27 year lady presented with a discharging-sinus at the umbilicus following open onlay polypropylene mesh hernioplasty 6 months post-operation,not responding to antibiotics. Ultrasound revealed mesh infection. She underwent two-stage mesh removal with wound being allowed to heal by secondary intention. No hernia recurrence at end of one year.
Case II: A 36 year lady presented one month post laparoscopic umbilical hernioplasty with Parietex mesh with swelling, redness and pain at umbilical region. Ultrasound showed 55 ml of fluid around the mesh. She was administered IV antibiotics for 1 week and oral antibiotics for 3 weeks with complete resolution of her symptoms. No hernia recurrence/infection on 3 months follow-up.
Case III: A 72 year lady presented with a swelling with no pain/redness at the umbilicus following retromuscular polypropylene mesh hernioplasty 12 years ago. Ultrasound abdomen revealed 80 ml of fluid around the mesh. She underwent surgery with complete mesh removal and wound left to heal by secondary intention. No hernia recurrence on one year follow-up.
Case IV: A 28 year gentleman presented with low grade fever, loss of weight and appetite, pain and swelling at left inguinal region since 4 months following TAPP polypropylene mesh hernioplasty. He had been treated with antibiotics/anti-tubercular drugs with no relief. Ultrasound revealed 80ml of pus with mesh crumpled in the abscess cavity. He underwent pus drainage with removal of the mesh+tacks. No Koch on histopathology noted. The wound healed in 1 month by secondary intention. No recurrence at 6 months follow-up.

APS-38

Treatment of Recurrence After Previous Total Extraperitoneal (TEP) Hernia repair

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Introduction: The reported recurrence rates after laparoscopic inguinal hernia repair are under 5 %. The laparoscopic repair offers clear advantages in recurrent inguinal hernias after open herniorrhaphy. We present our experience of treatment of recurrent hernias after laparoscopic inguinal hernia repair.
Patients and Methods: The medical records of eight patients who underwent hernia repair (Open or Laparosccopic) for a recurrence between January 2011 and July 2015 were retrospectively reviewed.
Results: The average time from the initial repair to the diagnosis of recurrence was 12 months (range 3-24). Five of the 8 recurrences were treated with a laparoscopic approach. The other three recurrences were repaired in anterior tension-free repair. No intraoperative or postoperative complications were recorded. There were no recurrences at an average follow-up of 14 months (range, 11-18).
Conclusions: Repeated laparoscopic hernia repair (TAPP) or change to open tension-free repair are the definite repair for recurrent inguinal hernias after previous TEP hernia repair. Further studies comparing laparoscopic repair versus open repair of recurrences after laparoscopic inguinal hernia repair will be helpful in defining the best approach when encountering these recurrences.

APS-39

Laparoscopic Totally Extraperitoneal Inguinal Herniorrhaphy in the Octogenarian-early outcomes and safety

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Objective: Inguinal hernia is common disease in extremely elderly patient. And Laparoscopic totally extraperitoneal hernia repair (TEP) also used to be taken in general population to reduce hernia recurrence and facilitate patient recovery and return to work. However, TEP in the octogenarian remains controversial, because of the safety. Therefore, we examine the outcomes and safety of TEP in the octogenarian, through a clinical review of patients who had undergone by TEP.
Methods: A retrospective study of 50 consecutive patients undergoing TEP for inguinal hernia repair were performed by single surgeon at a tertiary care center between March 2010 and June 2016. Three patients were excluded because there was no way to follow up by interview or telephone. All cases had done under general endotracheal ansthesia. All repair was performed with the same surgical methods what other surgeons or institutions do.
Results: A total of 65 TEP were successfully performed. There was no intraoperative problem and no conversion to open surgery. Mean age was 83 years (range, 80-93 years) and operation time (30-130 min) had a wide range. Mean postoperative hospital stay was 1.1 days (range, 0-3 days). Postoperative complications included thirteen urinary retention, no chronic pain, 1 delayed port site healing, two cord hydrocele, two cord edema, and no mesh infection. There was no recurrence in all patients from 2 months to 3 years of follow-up period.
Conclusions: With octogenarians, laparoscopic TEP for all inguinal hernia may be safe, effective repair, and the choice of primary procedure.

APS-40

Consideration of inguinal hernia repair while receiving ongoing antithrombotic therapy

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Recently, the number of patients taking antithrombotic drugs has increased, and due to bleeding and hematoma, such antithrombotic therapy is interrupted during the perioperative period and heparin bridging is performed prior to surgery. However, heparin bridging reportedly does not reduce the risk of thrombosis, such that continuing antithrombotic therapy has been regarded as an option for managing surgical patients. Herein, we compared a group undergoing inguinal hernia repair, while receiving ongoing antithrombotic therapy, with a group of patients who discontinued antithrombotic therapy and untreated patients. These treatment strategies were examined for their safety. Between July 2014 and March 2016, 145 patients underwent inguinal hernia repair, 75 of whom had been operated on under local anesthesia employing open techniques. The patients were divided into two groups, those who discontinued antithrombotic therapy or were untreated, and patients who remained on antithrombotic therapy. The group receiving ongoing antithrombotic therapy consisted of 29 cases. There were 46 cases in the group consisting of those not treated or in whom treatment was discontinued at the time of surgery. The factors analyzed were operative time, intraoperative bleeding, postoperative complications, and length of hospital stay. There were no significant differences in such factors between the two groups. Inguinal hernia repair employing open techniques and local anesthesia was considered to be safe, regardless of the presence or absence of the antithrombotic therapy. Inguinal hernia repair while continuing antithrombotic therapy was suggested to be beneficial for patients at high risk of thrombosis.

APS-41

Efficacy and outcome of total extraperitoneal herniorrhaphy (TEP) in patients with recurrent inguinal hernia

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Purpose: This study aimed to evaluate the efficacy and outcome of total extraperitoneal herniorrhaphy in patients with recurrent inguinal hernia.
Methods: Between January 2009 and September 2014, 472 patients underwent TEP henriorrhaphy for inguinal hernias. In this cohort, 38 patients with previous traditional open herniorrhaphy were defined as study group. For the comparison group, 114 patients without previous hernia operation history were selected to match the study group in terms of age, sex and laterality of inguinal hernia. Perioperative data including patients' demographics, operative time, pain scale, conversions, length of hospital stay, recurrence, and complications were recorded and analyzed.
Results: In this study, the mean follow-up period were 48 months (24~90 months). The operative time in study group and comparison group were 48.5 minutes and 42.5 minutes, respectively (p=0.8). The pain scale was higher in study group than that in comparison group, but not significant (2.8 vs. 2.3, p=0.7). Both groups were proceeded laparoscopically without conversion. The patients in both groups could discharge on the first postoperative day. During follow-up, only two patients in the comparison group had recurrent hernia (1.75%), and which were treated with transabdominal preperitoneal herniorrhaphy (TAPP) later on. Both groups had similar complication rates (5% vs. 3%, p=0.7).
Conclusions: TEP herniorrhaphy for patients with recurrent inguinal hernia is safe and effective. In this study, no significant differences were observed between the two groups in terms of operative time, pain scale, analgesic use, hospital stay length and complications.

APS-42

Usefulness of operation with the Kugel Mesh hernia patch under tumescent local anesthesia with intravenous anesthesia for patients who take anticoagulants

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Background: In operation of patients who take anticoagulants, patients need convert to heparinization. In result, hospital stay was extended and restart of anticoagulants was troublesome. In addition, it is difficult to discontinuation of anticoagulants due to primary illness. We report the usefulness of local anesthesia for patients who take anticoagulants undergo on operation for groin hernia.
Methods: We retrospectively analyzed 108 patients who underwent on operation with the Kugel Mesh hernia patch from January 2012 to March 2015 in Iwate Medical University under tumescent local anesthesia with intravenous anesthesia.
Results: Among 108 Patients included, 13 were heparinized (H), 15 were discontinued of anticoagulants (D) and 80 were continued of anticoagulants(C). Median operation time; H: D: C=65: 67: 61 (min), median amount of bleeding; H: D: C=14.5: 5.0: 5.0(ml), median duration of hospital stay; H: D: C=7: 4: 4(day).
Conclusions: Operation with the Kugel Mesh hernia patch under tumescent local anesthesia with intravenous anesthesia for patients who take anticoagulants is useful and safety under continuation of anticoagulants.

APS-43

A case of Amyand's hernia

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A 76-year-old man who had been diagnosed with talus, calcaneal and malleolar fracture by being involved in road traffic accident and treated by cast immobilization in the another hospital. He was transferred to our hospital for the purpose of rehabilitation. Seven days after the admission, he presented an abdominal pain and a physical examination showed a 10-cm swelling in the right inguinal region. An abdominal computed tomography showed the right inguinal hernia contains the intestine of the ileocecal region. He was diagnosed with an incarcerated inguinal hernia and manual reduction was performed. In the next day, he underwent surgery. The intraoperative findings showed that the vermiform appendix and the cecum was located in the right indirect hernia sac. The appendectomy and, then hernioplasty using lightweight mesh by the Lichtenstein method was performed. The postoperative course was uneventful. Inguinal hernia containing the vermiform appendix so called Amyand's hernia was relatively rare. We report our case of Amyand's hernia, along with the relevant literature.

APS-44

Analysis of inguinal hernia repair in elderly people

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Background: As the life expectancy of people has become longer than before, we have been increasingly encountering elderly patients during daily clinical practice. Thanks to advances in operative procedure and anesthesia for inguinal hernia, surgical treatment of inguinal hernia can be done relatively safely at present. We have retrospectively evaluated our experiences in performing inguinal hernia repair in elderly people.
Method: In all, 907 patients, who underwent inguinal hernia repair under tumescent local anesthesia with sedation between January 2010 and June 2016, were divided into two groups: Group A (774 patients, aged 20 - 79 years), Group B (133 patients, aged 80 - 97 years). The following items were compared between these two groups; operation method, sedative dose level, the type of inguinal hernia according to the classification of Japanese Hernia Society, operation time, time in the operating room, postoperative stay period, ratio of day surgery, postoperative complications.
Results: In group B, the ratios of femoral-type and combined-type were higher; the operation time and time in the operating room were shorter; and the sedation dose was lower; all applicants for day surgery were discharged from hospital in same day.
Conclusion: Surgeons can employ Kugel's approach, as a first choice, to avoid overlooking other combined-type hernias. Repair under tumescent local anesthesia with sedation is beneficial to the patient, especially the elderly, who expects day surgery. Accordingly, we consider that advanced age may not preclude the repairing of inguinal hernia if the operation is performed after sufficient preoperative evaluation.

APS-45

Tendency of inguinal hernia treatment in Shiga prefecture over the past 6 years

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Shiga Hernia Society was established in 2006. 25 institutions have participated in this society. This is the about 90% of all hospital in Shiga prefecture. We have started data registration from participating institutions since 2009. Here we report the tendency of hernia treatment in Shiga from the database analysis of Shiga Hernia Society.
A medical treatment fee for laparoscopic hernia repair was revised and was raised in April 2012. As a result, laparoscopic hernia surgery has been getting increased in Japan. On the other hand, it has been reported that the recurrence cases of TAPP and TEP have also increased from questionnaire survey of Japan Society for endoscopic surgery.
We collected about 4700 cases between April 2009 and June 2015. We divided primary inguinal hernias' data into two periods before and after April 2012.
After April 2012, the operation of anterior approach (AA) decreased and laparoscopic approach (LA) increased more than 3 times. The operating time of AA group did not change before and after April 2012. But the LA group's time is significantly longer after April 2012 compared with before; also AA group is significantly longer than LA group after April 2012.We think the data reflects actual hernia treatment by general surgeons in Shiga.Laparoscopic hernia surgery has been getting increased in Shiga.

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A COMPARATIVE STUDY BETWEEN MONOFILAMENT ABSORBABLE VERSUS NON ABSORBABLE SUTURE IN MESH FIXATION IN LICHTENSTEIN'S HERNIA REPAIR

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Purpose: Lichtenstein mesh hernioplasty for inguinal hernia is time proven and gold standard method. But, chronic pain is still a major irritating complaint that patients bring post-operatively to clinicians. Thus, an effort to reduce chronic pain was done in the form of using monofilament absorbable sutures in mesh fixation. The objective of this study was to compare the effect of monofilament absorbable (monofilament glycomer (biosyn)) and monofilament non absorbable suture in mesh fixation in Lichtenstein hernioplasty.
Methods: This prospective hospital based randomized comparative study included adults aged 18-60 years with inguinal hernia who underwent Lichtenstein's mesh hernioplasty in a tertiary academic hospital from 1March 2015 till 30 June 2016. Two groups were distinguished: Study group in which mesh fixation was done with monofilament absorbable suture and Control group in which mesh was fixed with monofilament nonabsorbable suture. Post operative chronic pain was assessed using 10 point Visual Analogue scale at post op day7, 3 months and 6 months.
Results: A total of 80 subjects were included in this study, 40 in each group. No age, sex or hernia side differences were observed between the study groups. Chronic pain mean VAS score at 6 months was higher in group with nonabsorbable suture compared with monofilament absorbable group (0.05 vs 0.30: p value:0.010) and foreign body sensation was also higher in non absorbable group(20% vs 5%: p value: 0.043).
Conclusion: Monofilament absorbable suture is associated with less chronic pain and foreign body sensation compared to monofilament nonabsorbable sutures.