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The application on two kinds of Self-made needle for using in laparoscopic pediatric inguinal herniorrhaphy

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Objective: To explore the clinical value on Self-made double-hole needle which use for laparoscopic pediatric inguinal herniorrhaphy.

Methods: To analyzed the data of postoperative that 1532 cases were reviewed, who were divided into the single-hole needle group (652 cases) and the double-hole needle group (880 cases), All of they were treat by Laparoscopic from April, 2006 to April, 2016.

Results: The average operation time of the group of single-hole needle was 17.7 mins which 4.4ml blood loss; 23 cases suffered small hematoma under the abdominal wall; and 3 patients recurred. The average operation time of the double-hole needle group was 7.4 mins which 1.2ml blood loss; 2 cases suffered small hematoma under the abdominal wall; and 1 patients recurred. Two groups of children staid in hospital with average of 2 days. The operation time, volume of bleeding, rate of complication in double-hole needle group were significantly less than those in the single-hole needle group ($P < 0.05$). The hospital stay, recurrence rate was not statistically significant ($P > 0.05$).

Conclusion: Self-made double-hole needle in laparoscopic pediatric inguinal herniorrhaphy with short operation time, less trauma, simple operation, in the clinically more efficiently, and that was worth generalizing and applying.

AS6-8

Laparoscopic Percutaneous Extraperitoneal Closure (LPEC) for pediatric inguinal hernia in our institute

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Dr. Hiroo Takehara and colleagues published a new operative method "Laparoscopic Percutaneous Extraperitoneal Closure (LPEC)" for pediatric inguinal hernia in 2000. It has been adopted as an alternative to traditional methods in a large number of institutions in Japan. This procedure is minimally invasive that enables to close hernia orifice without destroying the inguinal canal structure. In our institute, we have performed 657 cases of pediatric inguinal hernia by LPEC from 2005.

LPEC procedure in our institution is as follows:

1. First port insertion

First port is inserted by "Umbilical center insertion method". This technique can reduce the time for port insertion with no complications.

2. Port setting

A 3-mm laparoscopic dissecting forceps is inserted in the right lateral abdomen. The operator maneuvers the LPEC needle with the right hand.

3. Handling of the needle

LPEC needle holding doubled 3-0 non-absorbable sutures was punctured from the inguinal region just above the internal inguinal ring. The orifice of the hernia sac is closed with circuit extraperitoneal suturing around the internal inguinal ring using the LPEC needle.

4. Closure of the hernia orifice

One of the doubled sutures is lifted, so that the ligature can not to loosen.

All patients had no complication in need of treatment in perioperative period. 3 patients (0.46%) had recurrent hernia or hydrocele after LPEC. LPEC is suitable for pediatric inguinal hernia as a standard operative method with low complication and recurrence rates.

AS7-1

Diaphragmatic Hernia- does approach differ in management

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Diaphragmatic hernia require a high degree of suspicion for diagnosis. This is a study of 62 patients over last 14 years in a tertiary referral centre. There were 41 males. 28 of these patients presented in emergency with symptoms as breathlessness, penetrating or blunt trauma, intestinal obstruction, fecothorax and inappropriately placed intercostal drain in the stomach. Isolated diaphragmatic injuries were identified in only 9 patients and all patients were operated through a laparotomy. Average hospital stay was 12.5 days with mortality of 3 patients and morbidity in about 13 patients. 34 patients were laparoscopically operated. 22 patient required only sutures to close the defect, however 10 patients required reinforcement with a dual mesh and 2 patients required neodiaphragm creation. Average hospital stay was 5.7 days with no morbidity.

Conclusion; Diagnosis of diaphragmatic hernia requires high grade of suspicion. Patients with acute presentations are better treated with laparotomy, however laparoscopy may be attempted if facilities and expertise is available.

AS7-2

LAPAROSCOPIC REPAIR OF GIANT PARAESOPHAGEAL HERNIA WITH TOUPET FUNDOPLICATION AND BIOLOGIC MESH: A CASE REPORT

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Paraesophageal hernias (PEH) is an uncommon entity, especially GPEH (giant paraesophageal hernias). Giant paraesophageal hernia has been defined as more than one-third of stomach herniating into the thorax.

If left untreated, some severe complications such as perforation, bleeding and gastric strangulation, volvulus will occur. With the advent of laparoscopy, GPEH is now being approached with minimally invasive techniques. Although repair of the GPEH is a challenging surgical problem that has been and continues to be heavily debated, remarkable advantages including decreased pain and rapid recovery make laparoscopic repair being routinely performed. Since the first report by Congreve, which proved that laparoscopic repair was feasible and safe. We reported a case of giant PEH, which was successfully treated with laparoscopic repair using biologic mesh and Toupet fundoplication. Intraoperative finding revealed paraesophageal hernia with proximately one half of the stomach in the chest folding upon itself and organoaxially rotating, the large hernia sac filled with clear fluid. It is extremely rare reported in the existing English literature. The complete laparoscopic approach was used to repair the giant hernia. The laparoscopic procedures involved the repair of the paraesophageal hernia using biosynthetic mesh with Toupet fundoplication and gastropexy.

The highlights of our procedure are complete sac excision, esophageal mobilization, mesh hiatoplasty, partial fundoplication and gastropexy.

AS7-3

Laparoscopic repair of hiatal hernia with a novel tailored fundoplication according to symptom and age of patients

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Background: We have introduced tailored fundoplication according to the patient condition during laparoscopic repair of hiatal hernia. Surgical technique and evaluation of the outcome are described.

Patients and Methods: Computed tomography (CT) was performed for almost all patients to evaluate pneumonia. Nissen or Toupet fundoplication was performed for patients with gastroesophageal reflux disease (GERD) dominant and 90-180° anterior fundoplication was performed for patients with dysphagia dominant. For patients over the age of 75 who had the history of aspiration pneumonia, lateral fundoplication was performed to avoid postoperative dysphagia which can induce aspiration.

Results: From 2000 to October 2015, a total of 147 patients with hiatal hernia underwent laparoscopic repair. Type of hernia was 1: 77, 2:2, 3:41, 4: 27. Nissen, Toupet, anterior and lateral fundoplication was performed for 64, 52, 25 and 6 patients, respectively. 11 patients with mesenterioaxial and 7 patients with organoaxial volvulus were included. Operation time was 143.3 min and conversion to an open surgery was required for 3 patients. There was no mortality. Soft diet was started on 1.5 POD and hospital stay was 9.3 days. Postoperative dysphagia was observed in 16 patients, which was improved within 1 month except for 1 patient underwent Nissen. No dysphagia and aspiration pneumonia was occurred on patients underwent lateral fundoplication. Obvious hernia recurrence was detected in 20 patients in whom, revisional surgery was required on 16 patients. Symptom scores were significantly improved after surgery.

Conclusion: Laparoscopic hiatal hernia repair with tailored fundoplication is safe and effective.

AS7-4

A case of laparoscopic reoperation for recurrent hiatal hernia

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The patient was a 70-year-old female who underwent laparoscopic fundoplication, using the Toupet technique with gastrostomy, at our institution 3 years ago. Her postoperative course was good, and the gastrostomy was removed 2 months after the surgery. Afterwards, however, she started to experience discomfort and epigastric pain, but had no vomiting. Gastrointestinal tract X-ray contrast radiography and computed tomography showed a recurrent esophageal hiatal hernia, with protrusion of the gastric corpus and fornix which was wrapped around the esophagus. Therefore, a laparoscopic reoperation was performed. After dissecting postoperative adhesions, we sutured the esophageal hiatus with 3-0 V-LoctM (COVIDIEN) and reinforced it with a ParitexTM Composite Hiatal Mesh (COVIDIEN). We did not perform fundoplication because the intraoperative upper endoscopy showed that the cardia was not dilated; therefore, we thought that the previous fundoplication was intact. Laparoscopy revealed the presence of an abdominal incisional hernia under the laparotomy scar where the gastrostomy had been performed; therefore, a one-stage repair was performed using a mesh. The postoperative course was good, and the patient was discharged on postoperative day 7. Laparoscopic surgery for esophageal hernia is becoming popular, but reports of surgery for recurrence are scarce particularly in Japan. Postoperative adhesions often make laparoscopy challenging, but this approach has many advantages including good visibility of the surgical field, less blood loss, smaller wounds, and detection of other diseases. Therefore, a laparoscopic approach can be an appropriate choice even for recurrent hiatal hernias.

AS7-5

Management of recurrent hiatal hernia- Mesh repair- To Be Or Not To Be?

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Introduction: Hiatal Hernia is characterized by a protrusion of any abdominal structure other than esophagus into the thoracic cavity through a widening of the hiatus of the diaphragm.

Body: The prevalence of hiatal hernias and paraoesophageal hernias (PEHs) is lower in Asian populations than in Western populations. Similarly a recurrent hiatal hernia is uncommon. Recurrent hiatal hernia repair is indicated in patients when the symptoms match anatomical findings. The revisional surgery can often be completed laparoscopically in experienced hands. The technical aspects of a recurrent hiatal hernia repair are-

1. Any previous fundoplication should be taken down in its entirety
2. The right and left crura exposed, and the hernia sac excised.
3. Attention should be directed to ensuring adequate intra-abdominal esophageal length.
4. The success of laparoscopic revisional hiatal hernia surgery approaches that of the primary repair.
5. Mesh can be safely used in revisional surgery though there is inadequate and underpowered data to support its use presently. The type of mesh, whether to interpose or do an onlay repair, are some of the questions unanswered in the literature.

Conclusion: However promising results for recurrent hiatal hernia repair are, the recurrence rates are higher compared to primary hiatal hernia repairs. Such surgeries should ideally be done in a tertiary centre by experienced surgeons.

AS8-1

Long term follow-up of anterior approach preperitoneal hernia repair using the Kugel patch

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Background: Despite many advantages of original Kugel hernia repair over other procedures, there exist certain disadvantages of technical difficulty, long learning-curve and high early recurrence. The aim of this study is to explore the outcomes of long term follow-up using anterior approach preperitoneal hernia repair with the Kugel patch and determine its safety and efficacy.

Methods: 581 inguinal hernias were performed in 560 patients, using anterior approach preperitoneal repair. Patients' age and gender, type of hernias, operative time, hospital stay, complications and recurrence were evaluated.

Results: We included 581 hernias, with 354 on right side, 162 on left side and 65 bilateral sides. All hernias were primary. There were 443 indirect hernias, 115 direct hernias and 23 femoral hernias. Mean operative time was 50 minutes; local anesthesia was applied in 530 (91.2%) cases. Postoperative complications affected 50 patients (8.9%). The patients were discharged from 4 to 8 days (with average of 6 days). The averaged follow-up time was 70 months (12~120 mon.). There were three recurrences in the period (0.5%).

Conclusions: The results of long term follow-up with this procedure are safe and effective, easy to learn. We believe that this procedure should be adopted as an alternative method for Chinese patients with inguinal hernias.

AS8-2

Ambulatory groin hernia repair with anterior approaches - 5,000 cases experience in a hernia clinic

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Introduction: Miyazaki Surgery & Hernia Clinic is a specialized center of ambulatory groin hernia repair. The author reports the result of the treatment of over 5,000 cases of adult groin hernias.

Patients and Methods: Between April 2003 and December 2015, the author performed groin hernia repair on 5,012 patients (4,117 males / 895 females: 5,093 diseases). There were 4,759 primary and 334 recurrent groin hernias. The operation methods were decided according to the hernia classification of Japanese Hernia Society. A high ligation was done in the type I-1 (normal internal ring) patients. Rest of the patients underwent tension-free mesh repairs. For the Mesh repair, an inlay mesh repair was selected for the patients where preperitoneal dissection was possible, while others underwent a mesh-plug repair or a Lichtenstein repair. Operation method, operation time, postoperative recovery, complications were recorded.

Results: Seventy-two diseases were treated with high ligation, 1,750 with modified Kugel Patch, 1,013 with Kugel Patch, 572 with Prolene Hernia System, 564 with Ultrapro Hernia System, 470 with Ultrapro plug and 652 with other devices. The operation time was 50 min. The length of hospital stay after operation was 4.3 hours. The success rate of ambulatory surgery was 99.9%. There were 7 bleedings, 1 surgical site infection, 20 recurrences and 3 neuralgias.

Conclusions: "Tailored approach" of using the different groin hernia repair techniques, depending on the findings of the patient for the ambulatory adult groin hernia had excellent results for all patients.