

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 paraesophageal 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.

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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.

AS8-3

Effects of non-woven mesh in preperitoneal tension-free inguinal hernia repair: a retrospective cohort study

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Objective: Evaluate the effectiveness of non-woven mesh in preperitoneal tension-free inguinal hernia repair under local anesthesia.

Methods: The medical records of patients who received preperitoneal tension-free inguinal hernia repair under local anesthesia in our hospital from 2012 to 2015 were reviewed. Patients were included if they were repaired with non-woven mesh or woven mesh. Outcome measures were the operation time, length of stay, costs, complications, chronic pain, foreign body sensation and recurrence.

Results: A total of 389 cases were included. 186 cases were repaired with non-woven mesh (observation group), and 203 cases were repaired with woven mesh (control group). There were no significant differences in operation time and length of stay, but the difference in costs had a statistical significance with higher price in observation group. Seroma of inguinal region were occurred in 6 cases of the observation group and 8 cases of the control group with no significant difference and no other complications and recurrence in both groups. No cases was recorded with chronic pain in the observation group and 8 cases in the control group, meanwhile, foreign body sensation was found in 1 case of the observation group and 9 cases of the control group which showed attractive advantages of non-woven mesh.

Conclusions: Preperitoneal tension-free repair for inguinal hernia under local anesthesia using non-woven or woven mesh is available. The costs of non-woven mesh is higher than that of woven mesh, but the incidence rate of chronic pain, foreign body sensation are lower by using non-woven mesh.

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Randomized Trial Comparing Self Gripping Semi-Resorbable Mesh (PROGRIP) with Polypropylene Mesh in Open Inguinal Hernioplasty the 6 Years Result

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Objectives: The objective of this randomized controlled trial is to compare the outcomes following self-gripping mesh repair to polypropylene mesh secured with sutures in open inguinal hernioplasty.

Methods: Eligible patients aged 18 to 80 years old, who had primary unilateral uncomplicated inguinal hernia, were randomized into either Polypropylene (PL) group or PROGRIP (PG) group by computer generated code. The primary outcome was the time from mesh placement to end of operation, whereas secondary outcomes included the total operative time, amount of analgesic used, length of post-operative stay, seroma formation, chronic discomfort, chronic pain score and recurrence. The study was registered in www.clinicaltrials.gov carrying ID of NCT00960011. Patients were followed-up in out-patient clinic for 6 years after operation.

Results: From March 2009 to April 2016, 45 patients were included. There was no significant difference regarding patient demographics and hernia characteristics. In the PG group, there was significant reduction in time for mesh placement (11.8+/-3.1 min vs. 21.0+/-6.2 min, p<0.001) and total operative time (39.2+/-9.8 min vs. 47.7+/-8.0 min, p=0.003). There was one recurrence in PL group and nil in PG group. Although there was a significant difference in paresthesia between 2 groups, the difference disappears with time and comparable from post-operative 1 year onwards. There was no difference in chronic pain, chronic discomfort demonstrated till 6 years after operation.

Conclusions: Use of PROGRIP mesh in open inguinal hernioplasty effectively reduces the operating time with comparable long-term surgical outcome.

AS8-5

COMPARING N-BUTYL-2-CYANOACRYLATE (HISTOACRYL®) AND SUTURES FOR MESH FIXATION DURING LICHTENSTEIN HERNIA REPAIR: A DOUBLE-BLINDED RANDOMIZED TRIAL

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Background: Pain is the most likely cause of the delay in resuming normal activities among patients undergoing groin hernia repair. The aim of this study was to determine whether the use of Histoacryl® to fix the mesh instead of sutures reduces acute postoperative pain in patients operated on for inguinal hernias. The secondary objectives were to evaluate the operating time and determine postoperative complications, chronic pain and early recurrence rates during the 1-year follow-up period.

Materials and methods: 370 patients who underwent a Lichtenstein repair were randomized to receive either Histoacryl® or non-absorbable 2/0 sutures (Prolene®) for fixation of the lightweight polypropylene mesh. Postoperative complications, pain and recurrence were evaluated at the medical office by an independent blind observer.

Results: The postoperative pain at 8 hours, 24 hours, 7 and 30 days was less intense when glue was used instead of sutures, with statistical significance (p<0.001) in all measures. The operating time was significantly shorter using Histoacryl® (35.2 vs. 39.9 minutes, p<0.001). There were no significant differences between the groups in terms of postoperative complications, chronic pain and early recurrences at the 1-year follow-up.

Conclusions: Atraumatic mesh fixation with Histoacryl® provokes less acute postoperative pain than sutures after a Lichtenstein hernia repair. In addition, this method is faster than sutures without the risk of increasing complications or early recurrence rates. However, the differences favouring Histoacryl® appear to have no effect on the chronic pain rate. Histoacryl® could be routinely used for mesh fixation during open hernia repair.

AS8-6

Minimal Open Pre Peritoneal (MOPP) approach, a new technique for groin hernia repair. With a new mesh and a new and specific ancillar. First presentation with a long term results

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For the treatment of groin hernias we prefer to put a large prosthesis in the pre peritoneal space. With a small incision. We changed the classic mesh design, giving an asymmetrical ovoid shape, to fully adapt to the wide coverage of the musculo pectineal hole. Two sizes were provided to accommodate the importance of the parietal defect. After the introduction, the prosthesis is not fixed. Strips are set up on the skin and will be removed during the first postoperative consultation. Personal data under the control of the French hernia club data base:
850 hernias have been operated between September 2011 and October 2015.
Mean follow up: 860 days
Day surgery: (92.8%), one night staying: (4.64%)
Complications: bladder retention: 2; phlebitis: 1; superficial infection 2; Deep infection?: 1,
Recurrence: 1
Reoperation: 2 with a good result.
Post-operative pain: Visual Analogic Scale (VAS)
Day8: VAS: 0 =54%, VAS [1-3] =36.05%, VAS [4-6] =9.13%, VAS [7-8] =1.28%
Day30; VAS: 0= 81.73%, VAS [1-3] = 13.92%, VAS [4-6] =3.43%, VAS [7-8] =0.9%
Chronic pain
97 patients with pain at one month was reviewed between 3 and 6 months
At 3-6 months: VAS: 0= 79.38%, VAS [1-3]=9.27%, VAS [4-6] =10.30%, VAS [7-8]=11.03%
At two years; No discomfort =97.27, discomfort =2.27%; moderate pain= 0.45%
Patient opinion: Excellent 99.5%, Medium 0.5%
Conclusion: MOPP technique give an excellent result, with a very low chronic pain, recurrence and complication rates.

AS8-7

One of the hybrid surgery, LAH (laparoscope assisted hernioplasty) for ambulatory hernia surgery

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Introduction: I perform a LAH operation for an ambulatory groin hernia operation. It's combination conventional mesh repair and laparoscope, and it has the following some merits. 1, shortening of the wound, 2. It is more exact than the naked eye, because of expansion. 3. post operative pain is slight. 4. Can go home in a short time.

Method: Basically, I perform the Direct-Kugel method from 1.5-2cm length wound. Until the handling of hernia sac, I perform with used a magnifying glass. After this processing, I detached as much as possible between the peritoneum and preperitoneal fat tissue layer from a wound using a 3mm diameter laparoscope. After detachment, I measure a detachment range and insert mesh of size as big as possible. The mesh which I insert it in preperitoneal fat tissue layers, and unfolded enough using a laparoscope.

Result: I was operated on to 1308 patients (1373 lesions). Their sex ratio was 9:1 (males: females), with a mean age of 56.6 years. The type of hernia was indirect hernia 1012 lesions, direct hernia 275 lesions, femoral hernia 10 lesions and combine 23 lesions. All cases average operation time were 57min (with in bilateral) and mean wound length was 1.67cm. All cases came home on the same day and no severe complications.

Conclusions: There was not the case that a day surgery was not possible. The severe complications are not seen after operation, and the inguinal hernia day surgery is basically possible in all cases by LAH.

AS8-8

Prevention of male infertility development after different methods of inguinal hernia repair with the mesh explant

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Objectives: The study and comparison of quantitative composition of spermatozooids prior and after Lichtenstein and Gvenetadze operations.

Methods: For the recent 6 years 1000 patients have been operated on by the isolation method. 215 patients of the reproductive age (19-40 yrs.) with the bilateral inguinal hernias became the object of study. The patients were allocated into two groups. The first group contained those 66 patients (30,7%) who underwent bilateral Lichtenstein hernia repair. The second group 149 patients (69,3%) on whom bilateral hernia repairs by Gvenetadze method have been utilized. Complete spermomorphocitological investigations have been performed in all groups 2 days prior to surgery, 30 days and six months after surgery.

Results: Oligospermia, reduction of the quantitative sperm composition by 30-35% was revealed only in the first group ($p < 0,01$). In the second group no significant differences was registered. 68 patients had children after surgery by Gvenetadze method.

Conclusions: Hernioplasty by Gvenetadze prevents male infertility in all cases especially for bilateral inguinal hernia repair as well as in reproductive age. The given technique is more solid as the posterior wall of the inguinal canal presented by the transverse fascia, mesh and aponeurosis of the external oblique muscle therefore the recurrence rates of hernia is minimized and practically excluded. Based on the foregoing results this method is considered as an effective method of hernioplasty as for young as well for elderly patients.

Keywords: inguinal hernia, spermatic cord isolation, mesh material