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## Non-mesh (Desarda) versus mesh (Lichtenstein) methods for inguinal hernia repair Meta-analysis and system review

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**Background:** The ideal method to treat inguinal hernia is still unknown. The purpose of this study was to compare non-mesh (Desarda) with mesh (Lichtenstein) methods in primary inguinal hernia repair.

**Methods:** A systematic literature review and meta-analysis was undertaken to identify studies comparing the outcomes of Desarda and Lichtenstein in primary inguinal hernia repair. Published studies were identified by the databases PubMed, EMBASE and the Cochrane Library.

**Results:** A total of 452 patients in three randomized controlled trials (RCTs) were reviewed (226 patients in Desarda group; 226 patients in Lichtenstein group). The two groups did not significantly differ in early post-operative pain, hematomas, seroma, hydrocele, chronic groin pain, foreign body reaction or recurrence. Desarda method might cost shorter operating time than Lichtenstein. There was significantly earlier return to normal gait in favor of Desarda repair, and apparently, Desarda method cost much lower than Lichtenstein method.

**Conclusions:** From the data of this study, the outcomes of primary inguinal hernia repair with Desarda and Lichtenstein methods are comparable. Desarda method has advantage in operating time, cost and recovery, but still needs to be assessed in large, multi-center, well-designed RCTs.

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## INGUINAL HERNIA REPAIR WITH A NEW DYNAMIC FIXATION FREE 3D IMPLANT- A SINGLE ARM STUDY

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**Objective:** Prosthetic reinforcement is the gold standard in inguinal hernia repair. Almost 20-30% patients complain of postoperative pain due to irritation and inflammation caused by the mesh and methods of fixation and about 4-10% of these feel severe chronic postoperative pain. So a single arm study was conducted for the assessment of postoperative pain after inguinal hernia repair with a new dynamic, self-fixating Proflor mesh

**Methods:** From Oct 2012 to April 2016, 140 consecutive patients of Inguinal hernia were repaired with Proflor mesh (Insightra) where no suture fixation was done. All patients were assessed on visual analog scale (VAS) at 7 days, 3 months, 6 months and 1 year and examined for perioperative/postoperative complications.

**Results:** According to VAS, pain was reported in a range from 1 to 3 during the first week. No perioperative complications occurred. 11 postoperative complications were reported. 3 seromas, 1 ecchymosis, 6 hypoaesthesia, 1 postoperative pain from 7th postoperative day onwards which was initially intolerable but reduced in intensity after 2 months and was minimal at the end of 6 months. No recurrence was found.

**Conclusions:** Postoperative complication rates were comparable to the world literature. The use of this new mesh could be an alternative method to reduce chronic postoperative pain after inguinal hernia repair. It may become gold standard in future. Although further studies with long term results are still needed to establish it as a gold standard.

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## Transverse skin incision versus oblique skin incision in open inguinal hernia repair -- a Prospective Comparative Study

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**Object:** To compare the clinical outcomes of transverse skin incision (TSI) versus oblique skin incision (OSI) in open inguinal hernia repair (OIHR).

**Background:** Early postoperative pain is common to all inguinal hernia operations. A short-term study was performed to find whether the TSI could reduce the early postoperative pain.

**Method:** Between September 2014 and February 2015, sixty elective unilateral primary inguinal hernia patients were treated with TSI (n= 30) or OSI (n= 30). The primary endpoints were early postoperative pain, time of operation. Secondary endpoints were incidence of wound infection, seroma, hematoma and recurrence.

**Results:** Patients in the OSI group had significantly worse pain scores from the day after operation to postoperative day 7 (P <0.05). The incidences of complications were similar between the two groups.

**Conclusions:** From the data of this study, TSI was associated with reduced early postoperative pain without increasing the operation time. TSI was associated with fewer scars and did not increase the difficulty of operation. However, large random controlled trials are necessary to confirm these preliminary results.

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## The surgical treatment for late-onset deep infection after tension-free hernioplasty of inguinal hernia

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**Background:** At present, the complications of inguinal hernia repair using various types of synthetic patch, especially the erosion and infection are becoming increasingly prominent.

**Objective:** To summarize the experience in surgical treatment for late-onset deep infection after tension-free hernioplasty of inguinal hernia.

**Methods:** The clinical data of 4 patients with late-onset deep infection after tension-free hernioplasty of inguinal hernia treated in Affiliated Hospital of Anhui Medical University from July 2014 to September 2015 were analyzed retrospectively. Four cases of male with age range from 29 to 79 years old. Their BMI<25kg/m<sup>2</sup> and had no diabetes. The infection occurred in 2 weeks-13 years after hernia repair with polypropylene plug(mesh). 1 case of wound secretion were cultured as Staphylococcus aureus, 1 case as Enterobacter cloacae, 1 case as Klebsiella pneumoniae. 2 cases with patch erosion to the ileocecus and 1 case with patch erosion to the bladder.

**Results:** All patients patch (plug and mesh) were removed completely with suture wound directly. 2 cases underwent resection of the ileocecus and 1 case underwent partial resection of the bladder. All cases recovered with primary wound healing. With a follow-up of 10 to 24 months, no hernia recurrence occurred.

**Conclusion:** The mechanism of late-onset deep infection after tension-free hernioplasty of inguinal hernia is still unclear, but it is related to the material and design of the patch. Complete removal of patch and the wound of direct suture had shown a good effect.

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## Management of Mesh Erosion into Small Bowel and Urinary Bladder Following Laparoscopic Inguinal Hernia Repair

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Mesh erosion into visceral organs is a rare complication following laparoscopic mesh repair for inguinal hernia. A 78-year-old man underwent laparoscopic intraperitoneal onlay mesh repair of right hernia at another hospital 16 years ago. He presented with recurrent sepsis, groin swelling and fistula, and lower urinary tract symptoms 2 years. Diagnosis of mesh migration and erosion into small bowel and urinary bladder was made by percutaneous fistulography and cystography. At laparoscopy, a small bowel loop was adhered to the area of inflammation in the right lower abdomen. After adhesiolysis, mesh was seen to be eroding into small bowel and urinary bladder. Most of infected mesh was pulled out from urinary bladder wall using gentle traction except part of mesh into small bowel. Urinary bladder was repair under laparoscopy and test for leak was found to be negative. At part of open surgery, the involved small bowel segment was resected, and bowel continuity restored. The patient recovered uneventfully and was no recurrence at 1 year follow-up.

AFP1-6

## Study on Preventing of Surgical Site Infection of Inguinal Hernia Repair with An Interventional Boundle

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**Objective:** To explore the effect of the interventional boundle (chlorhexidine bath before operation, electric shaving, shaving on surgical day, skin disinfectant in chlorhexidine compound composition) for inguinal hernia repair in surgical site infection prevention.

**Method:** Using control trials in this study, in accordance with United States NHSN 2013 definition of surgical site infection surveillance and monitoring and comparing of the incidence of surgical site infection in baseline phases and intervention stages. Baseline phase is from July 2013 to July 2014 and intervention stage is from July 2015 to now.

**Results:** The incidence of surgical site infection for inguinal hernia in the stage of baseline was 6.43% (18/280), that in the intervention stage was 2.5% (1/40). Although we saw the decline in infection rates, but due to the small sample size, there is no significant differences in ( $\chi^2=0.39$ ,  $P=0.53$ ).

**Conclusions:** Through the four intervention measures preoperative chlorhexidine baths, electric shaving, shaving on surgery day, using skin disinfectant with chlorhexidine compound ingredient, we can reduce the incidence of surgical site infection for inguinal hernia, but compared to the baseline prevalence, we saw no significant difference and further study is need to confirm its effect.