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Original Research

Assessment of effectives of sutureless mesh repair: An observational study

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ABSTRACT:

Background: To evaluate the new technique of sutureless mesh repair in terms of post op complications, operative time and hospital stay. **Materials & methods:**We included 100 inguinal hernia patients in a row who had been hospitalized for elective surgery. After obtaining their full agreement for the surgery, patients who met the study's inclusion criteria were included. Inguinal hernia repairs were made without the use of glue or fixation sutures by covering the posterior inguinal wall with mesh. Spinal anesthesia was used during surgery on every patient. The working area was cleared and allowed to air dry. All the results were recorded and analysed by SPSS software. **Results:**Mean age of the patients of the present study was 37.3 years. Majority of the cases of the present study .i.e. 61 percent of the patients, had right inguinal hernia, whereas the remaining 39 percent of the patients had left inguinal hernia. Mean duration of procedure of the patients of the present study was 48.3 minutes. Mean postoperative pain score at 1 hour, 5 hours, 10 hours and 24 hours was 5.1, 4.9, 3.5 and 1.6 respectively. Mean duration of hospital stay was 1.38 days. Seroma formation and infection were seen in 8 percent and 4 percent of the patients respectively. **Conclusion:** Sutureless tension free mesh repair in the treatment of inguinal hernia cases is an effective technique.

Key words: Sutureless, Mesh Repair, Complications

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INTRODUCTION

Inguinal hernias present with a lump in the groin that goes away with minimal pressure or when the patient is lying down. Most cause mild to moderate discomfort that increases with activity. A third of patients scheduled for surgery have no pain, and severe pain is uncommon (1.5% at rest and 10.2% on movement).[1-4]Inguinal hernias are at risk of irreducibility or incarceration, which may result in strangulation and obstruction; however, unlike with femoral hernias, strangulation is rare. National statistics from England identified that 5% of repairs of primary inguinal hernia were emergency operations in 1998-9. Older age and longer duration of hernia and of irreducibility are risk factors for acute complications. Gallegos and colleagues studied the presentation of inguinal hernias with a "working diagnosis of strangulation." Only 14 of their 22 patients with an acute hernia had compromised tissue at operation, with one of 439 patients requiring bowel resection. Though the study numbers are small, these findings emphasise the rarity of strangulation. A recent larger study estimated the lifetime risk of strangulation at 0.27% for an 18-year-old man and 0.03% for a 72 year old man.[5-7]Hence; the present study was conducted for evaluating the new technique of sutureless mesh repair.

MATERIALS & METHODS

The purpose of the current study was to assess the sutureless mesh repair in terms of hospital stay, operating time, and post-surgical problems. We included 100 inguinal hernia patients in a row who had been hospitalized for elective surgery. After obtaining their full agreement for the surgery, patients who met the study's inclusion criteria were included. Inguinal hernia repairs were made without the use of glue or fixation sutures by covering the posterior inguinal wall with mesh. Spinal anesthesia was used during surgery on every patient. The working area was cleared and allowed to air dry. Following antiseptic dressing, the patient was moved to the ward. On the first day following surgery, the patients' pain levels were assessed at one hour, five hours, ten

hours, and twenty-four hours using the visual analogue scale (VAS). Sutures were removed on 7th post op day and all the participants were examined. All the results were recorded and analysed by SPSS software.

RESULTS

Mean age of the patients of the present study was 37.3 years. Majority of the cases of the present study .i.e. 61 percent of the patients, had right inguinal hernia, whereas the remaining 39 percent of the patients had left inguinal hernia. Mean duration of procedure of the patients of the present study was 48.3 minutes. Mean postoperative pain score at 1 hour, 5 hours, 10 hours and 24 hours was 5.1, 4.9, 3.5 and 1.6 respectively. Mean duration of hospital stay was 1.38 days. Seroma formation and infection were seen in 8 percent and 4 percent of the patients respectively.

Table 1: Distribution of patients according to the site of inguinal hernia

Type of hernia	Frequency	Percentage
Right	61	61
Left	39	39

Table 2: Duration of operative procedure

Duration of operative procedure (minutes)	Value
Mean	48.3
SD	5.1
Minimum	30
Maximum	68

Table 3: Postoperative pain score at different time intervals

Time interval	Mean Postoperative pain score	p-value
1 hour	5.1	0.001 (Significant)
5 hours	4.9	
10 hours	3.5	
24 hours	1.6	

DISCUSSION

Even though the lifetime risk of developing an inguinal hernia is 27% for men and 3% for women, the etiology remains uncertain. Inguinal hernias can be subdivided into lateral and medial hernias. Inguinal hernias are almost exclusively lateral in children, whereas women and men have both subtypes. Lateral hernias are more frequent, but medial hernias have a higher risk to recur after repair. Lateral and medial hernias are often treated similarly, even though the described differences in age, sex, and recurrence rates imply different etiologies.The risk factors for developing an inguinal hernia can be divided into patient risk factors such as age and sex, and external risk factors such as physically demanding work. Risk factors for developing a primary inguinal hernia are male gender and old age, a patent processus vaginalis, systemic connective tissue disorders, and a low body mass index (BMI). Researchers have found an association to prostatic hypertrophy but it is uncertain if it truly is a risk factor.[6- 10]Hence; the present study was conducted for evaluating the new technique of sutureless mesh repair.

Mean age of the patients of the present study was 37.3 years. Majority of the cases of the present study .i.e. 61 percent of the patients, had right inguinal hernia, whereas the remaining 39 percent of the patients had left inguinal hernia. Mean duration of procedure of the patients of the present study was 48.3 minutes. Mean postoperative pain score at 1 hour, 5 hours, 10 hours and 24 hours was 5.1, 4.9, 3.5 and 1.6 respectively. Mean duration of hospital stay was 1.38 days. Seroma formation and infection were seen in 8 percent and 4 percent of the patients respectively.Cunha-e-Silva JA et al (2016) evaluate the early postoperative results of inguinal hernia repair by the conventional technique with self-fixating mesh versus laparoscopic totally extraperitoneal repair with polypropylene mesh. We compared pain, surgical time and early complications. 80 consecutive patients treated in the surgical clinic of the Gaffrée e Guinle University Hospital (HUGG) were assessed. They included patients with unilateral inguinal hernia, not relapsed and operated only on an elective basis. They divided patients into two groups of 40 patients each, SF group (conventional technique using self-fixating mesh) and LP group (laparoscopic technique with polypropylene mesh). They followed patients upto 45th postoperative day. Out of 80 patients, 98.7% were male and the majority had indirect right inguinal hernias (Nyhus II). There was no difference between the groups studied in respect to pain and operative time. However, more complications occurred (seroma and hematoma) in the open surgery group. Both operations have proved feasible, safe and with minimal postoperative pain and a low operating time.[11]Amra MA (2017) evaluated short-term outcomes of Lichtenstein technique of hernia repair using ParietexProGrip monofilament polyester mesh in Egyptian patients with inguinal hernias. Prospective analysis of 50 patients underwent

Lichtenstein technique for hernia repair was done. The primary outcome was chronic pain measured at 3 weeks, 3, 6, and 12 months postoperatively. Secondary outcomes were perioperative and early postoperative complications, return to usual activities and recurrence rate of the hernia. A difference in pain between preoperative and postoperative values was calculated at all follow-up time points. Fifty cases (all males) were studied. Mean ± standard deviation (SD) patient age was 39.2 ± 10.4 (range 18–60) years. Most hernias were Gilbert's type II [12 (24%)] or III [16 (32%)]. During 12 months postoperatively, none of the patients developed systemic postoperative complications or recurrent hernia. The mean ± SD pain visual analog scale score decreased from 12.8 ± 8.4 after 3 weeks to 0.72 ± 2.2 after 6 months. From postoperative 3 weeks to 6 months, there were notable improvements in health and also in health-related quality of life. They concluded that he use of self-gripping ParietexProGrip composite monofilament polyester mesh in Lichtenstein inguinal hernia repair is rapid, effective, simple, and safe. It is correlating with low postoperative groin pain and improved quality of life activities patients.[12]Lin H et al (2018) conducted a study to clarify which mesh fixation method was more suitable in Lichtenstein inguinal hernia repair. Articles published up to July 2017 were searched using MEDLINE, the Cochrane Library, Embase and the Web of Science. Randomized controlled trials (RCTs) comparing glue versus suture mesh fixation in Lichtenstein inguinal hernia repair were included in the review. The quality assessment and data extraction of included studies were applied by 2 independent authors. Thirteen RCTs with 2375 patients were eligible for inclusion. Eight trials compared synthetic glue with suture fixation and five compared biological glue with suture fixation. The results showed that there was a lower incidence of early chronic pain, and hematoma in the glue fixation group. Suture mesh fixation method cost more time in operation than glue. There was no evidence of an increase in chronic pain or recurrence rates with glue fixation method in the long-term follow-up. Mesh fixation with glue compared with sutures in Lichtenstein repair inguinal hernia repair is faster and less painful, without an increasing in terms of recurrence rates in the long term.[13]

CONCLUSION

Sutureless tension free mesh repair in the treatment of inguinal hernia cases is an effective technique.

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