Original Research Article

Inguinal hernia repair using standard mesh - Our experience

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Abstract

Background: Inguinal hernia repair using mesh is one of the most frequently performed operations in general surgery. We evaluated pain, recurrence, complications such as wound infection, mesh infection, return to work and length of hospital stay after hernia repair using standard mesh.

Materials and methods: A prospective clinical study was conducted with standard polypropylene mesh repair of a hernia. Data were collected from admission till discharge from the hospital, one month, two months and three months after surgery. At each visit clinical examination and ultrasound was done to evaluate chronic persisting inguinal pain and recurrences.

Results: A total of 80 patients underwent tension free hernia repair with standard mesh. There were 36 males and 44 females. The mean age of the patients was 54±8.2 years. The average duration of stay in the hospital was 5.2±1.4 days. 4/80 (5%) had wound infection, 2/80 (2.5%) had mesh infection and only 7/80 (10%) had recurrent pain after one year.

Conclusion: In our study, low recurrence rates, early return to work and a low percentage of persistent pain suggest that open repair with standardised mesh for hernia repair remains a good option for the low-income group patients. Additionally, it is easy to perform, inexpensive and can be done under local anesthesia.

Key words

Open repair, Persistent inguinal pain, Groin pain.

Introduction

Inguinal hernia repair using mesh is one of the most frequently performed operations in general surgery [1]. Hernia repair can be done by suture or by using mesh. The mesh can be placed using an open technique or by laparoscopic approach. Laparoscopic hernia repair is expensive, requires

a steep learning curve, carries the risk of serious visceral and or vascular injuries [2]. The Lichtenstein mesh repair technique has become the gold standard for inguinal hernia repair [3]. The procedure is easy to learn for surgeons and can be performed under local anaesthesia. Lichtenstein mesh repair reduced the recurrence rates to < 5% [4]. However, mesh fixation with sutures to avoid dislocation has been considered as a cause of chronic pain and discomfort. Chronic pain after hernia repair was reported between 25% and 30% for the majority of studies [5]. Patients experience chronic pain and discomfort, which had a significant impact on health-related quality of life [6]. With this background, we evaluated pain, recurrence, complications such as wound infection, mesh infection, return to work and length of hospital stay after hernia repair using standard mesh.

Materials and methods

An prospective clinical study was conducted with standard polypropylene mesh repair of a hernia. Institutional ethics committee approved study proposal, and informed consent was obtained from all participants. Both male and female patients over 18 years of age and in ASA grade – I and II, undergoing open primary hernia repair were included. Patients having factors predisposing to recurrence such as a chronic cough, ascites, previous hernia surgery were excluded from the study. The pain was measured on a 100-mm visual analogue scale (VAS). Postoperative pain reduction from baseline pain (ΔVAS), complications such as wound infection, mesh infection, return to work and length of hospital stay were studied. Data were collected from admission till discharge from the hospital, one month, two months and three months after surgery. At each visit clinical examination and ultrasound was done to evaluate chronic persisting inguinal pain [1] and recurrences.

Operation Technique

All patients hernia repair was done using plug and patch technique. The operation was performed under local anaesthesia. The four-centimetre skin incision was given the external oblique fascia was opened and hernia sac was dissected from the adjacent cord structures. It was cleared to the level of the internal inguinal ring or indirect defect, respectively, and was pushed gently into the abdominal cavity. In all cases, a plug was formed out of a 10 cm Prolene mesh, and its length was adapted to the individual anatomical situation. The plug was inserted behind the defect and fixed to its margin with sutures. The internal inguinal ring was then narrowed with sutures so that only the fingertip could pass through. Additionally, an on lay Proline mesh (5X10 cm) was implanted and sutured onto the inguinal floor. The spermatic cord structures passed through a slit in the mesh, which was closed by suture. The external oblique fascia was closed with a running suture and skin with an intracutaneous suture. The patients were prompted to direct mobilisation. If the immediate postoperative course was uneventful and the local findings were normal, they were discharged on the 3 or fourth day of the operation.

Statistical analysis

Data was presented as Mean, Standard Deviation, Numbers and percentages. Repeated Measures ANOVA and chi-square tests were the computed inferential assessments. A two-tailed P value less than 0.05 was considered significant.

Results

A total of 80 patients underwent tension free hernia repair with standard mesh. There were 36 males and 44 females. The mean age of the patients was 54±8.2 years. The average duration of stay in the hospital was 5.2±1.4 days. 4/80 (5%) had wound infection and 2/80 (2.5%) had mesh infection. Pain, recurrence and return to work after hernia repair with mesh was presented in **Table - 1**.

Discussion

Surgical repair of inguinal hernias is a common procedure in adult men however, 15 percent or more chances of recurrence with pain and disability [7]. After the introduction of tension-

free surgical repair with the use of prosthetic mesh, recurrence rates were as low as 5% with improved patient's disability. Such a tension-free surgical repair can be performed under local anaesthesia is used, and patients are discharged within a few hours [8]. It can also be carried out using laparoscopic method [9]. However, requires general anaesthesia, expertise and it is more often associated with serious intra-operative complications than is open repair [10]. Mesh repair results in a lower recurrence rate and less abdominal pain and does not lead to more complications than suture repair [11]. In our study 80 patients underwent mesh repair for a hernia, 90% were pain-free by the end of third follow-up, only 5% were recurrences, all patients returned to work within three months. We encountered only 5% wound infections and 2.5% mesh infection, wound infection treated with antibiotics and dressings, in those patients who had mesh infection; mesh was removed, treated with antibiotics and a redo procedure was done to insert a new mesh once the infection is healed. Seventy-two patients did not come for further follow-up only eight patients were complaining chronic groin pain even at the end of one year suggesting that 10% had persistent pain. In contrast, a study reported a higher rate of 16.5% with open repair for a hernia. [12]. However, many studies have shown that persistent pain after mesh repair ranges from 0-60% [13, 14, 15]. It is possible that the variation in persistent pain is due the differences among the operating surgeons. It has been mentioned in the literature that closer attention by the operating the surgeon and better understanding of the anatomy may help in reducing the incidence of persistent chronic pain.

Table – 1: Pain, recurrence and return to work after hernia repair with mesh.

	Baseline	**Month-1**	**Month-2**
Pain VAS	86.43±8.56	55.55±4.66	34.34±3.50
Absolute change in VAS pain (mm)	-	-30.88±9.39	-52.09±8.80
% Change from baseline	-	-35.73	-60.27
Completely Pain-free		36/80 (45%)	55/80 (68.75%)
Recurrences	-	-	-
Return to work	-	42/80 (52.5%)	67/80 (83.75%)

Conclusion

In our study, low recurrence rates, early return to work and a low percentage of persistent pain suggest that open repair with standardised mesh for hernia repair remains a good option for the low-income group patients. Additionally, it is easy to perform, inexpensive and can be done under local anaesthesia.

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