

MESH REPAIR; OUTCOME IN INGUINAL HERNIA SURGERY

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ABSTRACT: Objectives: To determine the outcome of mesh repair in the patients undergoing inguinal hernia surgery. **Setting:** Margala Teaching Hospital Rawalpindi. **Duration:** June 2006 to June 2008 **Study Design:** Quasi experimental. **Patients & Methods:** This study included the 50 male patients underwent open mesh repair. In the long term follow up, recurrence of the disease and wound infection were noted. Patients were consecutively selected. **Results:** Recurrence of hernia was observed in one out of 50 patients. Rest of the patients were alright. **Conclusions:** The mesh repair has low recurrence rate, it is tension free and is easily learned.

Key words: Mesh repair, inguinal hernia, a wound infection.

INTRODUCTION

An external hernia is an abnormal protrusion of the intra abdominal tissue through a facial defect in the abdominal wall. 75% of the hernia occurs in the groin (indirect inguinal, direct inguinal and femoral hernia). Incisional and ventral hernias constitute about 10%, umbilical comprise about 3%. Generally hernial mass is composed of covering tissues (skin, subcutaneous tissue). Peritoneal sac and any contained viscera particularly if the neck of sac is narrow where it emerges from the abdomen, bowel protruding into the hernia may become obstructed or strangulated irrespective of site. The hernia could be reducible, irreducible, obstructed, incarcerated and strangulated.

Nearly all inguinal hernia in infants, children and young adults are indirect inguinal hernia. In contrast, direct inguinal hernias are acquired as result of a developed weakness of the transversalis fascia in the hesselbach area. Any condition that increase that intraabdominal pressure may contribute to the appearance and progression of hernia.

Marked obesity, abdominal strain from heavy exercise or lifting weight, Cough, constipation with straining at stool and prostatism with straining on micturation are often complicated.

Cirrhosis with ascites, pregnancy, chronic ambulatory peritoneal dialysis and pelvic tumor may also contribute.

Patients of inguinal hernia complains swelling, pain and heaviness over the inguinal region.

Diagnosis of an inguinal hernia is made clinically, groin swelling that appears on coughing straining or standing and disappears on lying. In patient with the groin pain but no swelling. Ultrasound is the most appropriate investigation with high degree of sensitivity and specificity in experienced hands¹. MRI may provide more objective alternate.

PATIENTS & METHODS

This study was carried out at Margalla Teaching Hospital, Rawalpindi over the period of two years from 10.06.2006 to 10.06.2008.

It was approved ethically. These patients were already informed about the study and long term four follow up visits were ensured from these patients.

Before the surgery, routine pre-operative evaluation was performed. These patients were operated by the same surgeon. In 47 patients, surgery was performed under Spinal Anesthesia and in remaining 3 patients General Anesthesia was given.

Indirect inguinal hernia surgery, reinforcement of posterior inguinal wall was done by the placement of polypropylene mesh and was sutured with prolene 2/0 after ligation and excision of hernial sac.

While in direct inguinal hernial surgery sac was invaginated and mesh was placed over the posterior inguinal wall similarly in the indirect inguinal hernia surgery.

3 doses of antibiotics (3rd generation cephalosporin) were used, 1st dose of antibiotic was administered half an hour before surgery while remaining two doses were given 12 hourly in postoperative period.

Post-op analgesia was given according to needs of the patients. These patients were discharged on the 2nd post-op day and stitches were removed after one week. Patients were sent to home along with the instruction of the four follow up visits.

Four follow up visits were planed. Patients attended their visits according to their schedule. Patients were examined to see the recurrence of disease. One patient developed the recurrence of hernia in his 3rd follow-up visit while rests of the patient were alright.

RESULTS

In this study of 50 patients, 28 patients (56%) had right sided inguinal hernia while remaining 22 patients (44%) were with left sided inguinal hernia, (as shown in table I).

Among these patients, 35 patients had indirect inguinal hernia and 15 patients had direct inguinal hernia. There patients were in the age group of 30-65 years (as shown in table II).

One out of the 50 patients had shown the recurrence of disease while the rest of 49 patients were alright (as shown in the table III). 2 patients had attended the 3 follow up visits, they missed the last visit but on telephonic contact they had no recurrence of hernia and wound infection.

Table-I. Distribution of cases according to side hernia

Patients No.	Side of hernia	%age of patients
28	Right inguinal hernia	56
22	Left inguinal hernia	44

Table-II. Distribution of cases according to age

Patients No.	Mean age group in years	%age of patients
40	45 - 65	80
10	30 - 40	20

Table-III. Outcome of mesh repair (N=50)

Patients No.	Recurrence of hernia	Wound infection
49	-	-
01	+	-

*Mark (-) shows non recurrence of disease
Mark (+) shows recurrence of disease*

DISCUSSION

Inguinal hernia repair is the most frequently performed operations in general surgery. The aims of the surgical repair are to eliminate swelling, to relieve the discomfort, pain and to remove the risk of strangulation, the probability of strangulation of an inguinal hernia has been estimated to be 2.8% at 3 months and 14% after 2 years² and this complication carries a significant morbidity and mortality particularly in the elderly³.

Inguinal hernia repair using tension free mesh repair (introduced in 1980) gives a better result then conventional repair. The best objective evidence comes from EU hernia trialist collaboration metaanalysis of 2002 which reported on 20 randomised trial (5016) patients⁴.

Compared with the conventional repair, patients, having mesh repair had a shorter hospital stay faster return to routine activities and lower incidence of persisting pain.

Open mesh repair was also associated with 50-70% reduction in the risk of recurrence. Nation wide surveys of surgical practice (UK) reveal that open mesh technique has become the procedure of choice⁵⁻⁶ for primary unilateral inguinal hernia.

A wide range of prosthetic biomaterials are available for hernia repair. These are polypropylene, polyester and

polytetrafluoroethylene, (PTFE).

Standard polypropylene has tensile strength much greater than is required⁷ the majority of patient should be able to return to the routine activity at the end of one week after open mesh repair⁸.

Chronic mesh infection is rare with an estimated incidence of 1 in 1000 under proper sterilization.

In case of infection long term antibiotics and attempt to save the mesh are ineffective. However prophylactic antibiotic reduces the risk of infection⁹. Added advantage of open mesh repair is cost effective and more easily learned. Recently introduced laparoscopic repair is difficult to learn than open repair and carried a risk of serious visceral injury (Bowel, Bladder) are vascular injury. Laparoscopic repair should be reserved for the recurrent and bilateral inguinal hernia.

CONCLUSION

Open mesh repair is associated with low recurrence rate (1-2%) and it is tension free, less complex and more easily learned. It is procedure of choice for primary unilateral inguinal hernia.

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PREVIOUS RELATED STUDIES

- Javed M, Nasir Abdul. Inguinal hernias; comparison of open pre-peritoneal mesh repair with liechtenstein tension free repair. Professional Med J Dec 2006; 13(4):710-715.