



SURGICAL MANAGEMENT OF RECURRENT INGUINAL HERNIA – A STUDY OF 50 CASES

General Surgery

Dr Vipul Lad Assistant Professor, Department of General Surgery, SMIMER, Surat, Gujarat

Dr Girish Bochiya* Senior Resident, Department of General Surgery, SMIMER, Surat, Gujarat
*Corresponding Author

Dr Ketan Solanki Master of Surgery, Department of General Surgery, SMIMER, Surat, Gujarat

ABSTRACT

Background: Inguinal hernia surgery is commonly performed surgery by a general surgeon. Failure of surgery is judged by recurrence. It is important to identify the factors causing recurrence. Despite all the progression made in surgical techniques and prosthesis the recurrence rate remains 12-13%. **Methods:** prospective study conducted among 50 indoor patients of General surgery department of SMIMER, Surat between January 2019 to January 2021 who presented with recurrent hernia. **Results:** Most common age group presenting with recurrent hernia is 46-55 years with male to female ratio of 4:1. Direct hernia more prone for recurrence with 64% patients presenting with it. Pain is the most common post operative complications followed by seroma. **Conclusion:** Open mesh repair is preferred over other conventional surgery in recurrent hernia repair surgery.

KEYWORDS

Recurrent Inguinal Hernia, Open Mesh Repair, Open Suture Repair

INTRODUCTION

A hernia is an abnormal protrusion of a peritoneal-lined sac through the musculoaponeurotic covering of the abdomen.[1]

Abdominal hernias include groin hernia (70%), umbilical hernia (15%), epigastric hernia (7%) and incisional hernia (9%). Most abdominal hernia arises in the groin (from the Latin word *inguen*, so named Inguinal) because it is the transition zone between the abdomen and thigh. Inguinal canal is a potential weak opening in the lower abdominal wall, which allows the passage of blood vessels, lymphatic, vas deference and nerves to enter the scrotum. Approximately 96% of all the groin hernias are inguinal and remaining 4% being femoral. [2] Hernia Surgeries are basically of three types;

Herniorrhaphy – Repair of hernia defect with use of anatomical tissue.

Hernioplasty - Repair of the hernia defect with reinforcement of mesh.

Herniotomy – Excision of hernia sac.

The first half of the 20th century hernia surgery based on good anatomical knowledge of inguinal region and dominated by pure tissue repair based on Bassini-type inguinal hernia repairs and their variants, which included the Marcy, McVay, Halstead, Andrews, Ferguson, and Shouldice repairs. Since the introduction of the Bassini method in 1887, more than 70 types of pure tissue repair had been reported in the surgical literature.

The most commonly performed tissue repairs are those of Bassini, Shouldice, and to a lesser extent McVay and have mean recurrence rate of 7.3%, 1.1% and 5.2% respectively.[3]

National Library Medicine MeSH term has defined *recurrence* as [7] “the return of a sign, symptom, or disease after a remission”.

An unacceptable recurrence rate and prolonged postoperative pain after tissue repair along with better understanding of the metabolic origin of inguinal hernias lead to the concept and acceptance of tension-free hernioplasty with mesh.[4]

In second half of the 20th century, D.E. Acquaviva (1944, France) presented the first use of a nylon synthetic mesh (polypropylene was not available until 1957) in a manner that eliminated hernia and tension while leaving a defect intact.[5]

Francis Usher focused on development of prosthesis and finally introduced a new polymer ‘polypropylene’ (Marlex 50).[6] After that many surgeons had used polyester, polypropylene, and e-PTFE meshes to repair the posterior wall of inguinal canal.

In 1989, Lichtenstein introduced the current concept of the “tension free” polypropylene mesh repair as an office procedure under local anaesthesia, into every day, common place and because of that on-lay hernia surgery with mesh is known as “Lichtenstein’s tension free hernioplasty”. He also pioneered the idea that hernia surgery is special, that it must be performed by an experienced surgeon, was a major shift towards use of prosthesis.[6]

Aim of my study is-

- “Evaluation of aetiology and Surgical management of recurrence in patients of inguinal hernia repair

METHODS

This was a prospective study conducted among 50 indoor patients of General surgery department of SMIMER, Surat between January 2019 to January 2021 (2 year) who are willing to give consent for the study and fall into inclusion criteria.

Our study was approved by institutional ethical committee.

Inclusion criteria:

1. Patients of age above 18 years presenting with recurrent Hernia.

Exclusion criteria:

1. Obstructed recurrent hernia
2. Strangulated hernia

Mode of Selection

cases of recurrent inguinal hernia were randomly selected and studied in detail after the admission to the hospital.

Routine investigations were carried out in all the patients. Investigations were carried out like Hb%, bleeding and clotting time, urine for albumin, sugar, microscopy, blood: fasting sugar, urea, electrocardiogram screening, X-ray of chest to rule out lung pathology. USG abdomen to rule out benign prostatic hyperplasia.

During the operation, the type of hernia and contents of the sac were noted down. All the cases were operated by one or other methods depending upon the intraoperative findings.

During their stay in the hospital postoperative complications like urinary retention, UTI, wound infection, scrotal haematoma were noted and treated properly.

All the cases were followed up for 6 months to 2 years for hernia recurrence and complication. Statistical data analysed by SPSS version 20 software.

RESULTS

50 indoor patients of General surgery department of SMIMER, Surat were studied between January 2019 to January 2021 (2 year) for recurrent hernia management.

Table No 1: Age distribution

AGE GROUP (YEARS)	NUMBER OF CASES	PERCENTAGE
<35	3	6
35-45	9	18
46-55	30	60
56-65	7	14
66-75	1	2
>75	0	0
TOTAL	50	100

In this study, the maximum incidence of recurrent inguinal hernia were observed among 46-55 years age group (60%). Comparatively less among < 35 years age group and above 75 years. The youngest was 30 years and eldest age was 73 years.

Table No 2: Sex distribution

SEX	NUMBER OF CASES	PERCENTAGE
MALE	40	80%
FEMALE	10	20%
TOTAL	50	100%

The total number of hernia cases admitted during the study period were 50, among which male were 40 and female were 10 cases, average was 80% male and 20% female.

Table No 3. Technique of previous surgery

Technique	Number of patient	Percentage
Open Suture repair	38	76%
Open mesh repair	12	24%

Out of 50 patients of Recurrent hernia, 38 patients (76%) were previously operated by open suture repair and 12 patients (24%) were previously operated by open mesh repair.

Table No 4: Mode of presentation

MODE OF PRESENTATION	Open suture repair	Open mesh repair	Total
SWELLING	18(78.3%)	5(21.7%)	23(46%)
SWELLING AND PAIN	20(74.1%)	7(25.9%)	27(54%)
TOTAL	38	12	50(100%)

In my study, 27 patients(54%) were presented with groin swelling and pain, 23 patients(46%) patients was presented with only groin swelling as chief complaint.

Table No 5: Risk Factors and associated comorbidity

RISK FACTORS	TOTAL
CHRONIC COUGH	8
CONSTIPATION	4
PROSTATIS/DYSURIA	0
OBESITY	6
SMOKER	2
HYPERTENSION	10
DM	4
IHD	0

In my study out of 50, patients having risk factors like chronic cough (8 patients), Constipation (4 patient), Obesity (6 patients), Hypertension (10 patients), DM (4 patients) and Smoker (2 patient) were there.

Table No 6: Etiological Factors For Surgeries:

TYPE OF PREVIOUS SURGERY		
EMERGENCY	6	12%
ELECTIVE	44	88%
WOUND COMPLICATIONS AT THE TIME OF PREVIOUS SURGERY		
SEROMA	6	12%
WOUND INFECTION	16	32%

In our study, 12% of patients had previously operated in Emergency. 44% of patients had wound complications in previous surgical procedure.

Table No 7: Type of hernia as per intra operative finding

TYPE OF HERNIA	NUMBER OF CASES	PERCENTAGE
DIRECT	32	64%
INDIRECT	8	16%
BOTH	10	20%
TOTAL	50	100%

In this study, majority of the patients (64%) had direct type of recurrent inguinal hernia, (16%) indirect recurrent inguinal hernia and pantaloon recurrent inguinal hernia were 20%.

Table No 8: Post operative complications following recurrent hernia repair surgery

COMPLICATIONS	Number of patients	Percentage
PAIN	26	52%
RESPIRATORY DISTRESS	0	0
URINARY RETENTION	5	10
WOUND SEROMA	6	12
WOUND INFECTION	8	16
RECURRENCE	0	0
MESH INFECTION	0	0
BOWEL COMPLICATION	0	0

In our study, post operative pain present in 26 (52%) patients who were operated.

6 (12%) patients had wound seroma, 8(16%)patients developed wound infection, Wound infection was treated with antibiotics according to culture and sensitivity reports. Seroma formation was treated by drainage and dressings.

5(10%) patients complained of urinary retention. There was no surgery related mortality and no recurrences in this study.

DISCUSSION

Age incidence

In our study, the maximum incidence of recurrent inguinal hernia were observed among 46-55 years age group (60%). Comparatively less among < 35 years age group and above 75 years. The youngest was 30 years and eldest age was 73 years

Sex ratio

The total number of hernia cases admitted during the study period were 50, among which male were 40 and female were 10 cases, average was 80% male and 20% female.

In the study made by P. M. LAFFERTY, A. MALINOWSKA and D. PELTA the sex ratio was 92:8 (Male:Female).[8]

Mode of presentation

In our study, 27 patients was presented with groin swelling and pain, 23 patients were presented with only groin swelling as chief complaint. The study showed that all the patients presented with swelling in the groin only 54% patients had associated pain in the swelling

Content of the sac

The study shows that most of recurrent inguinal hernia patients had small intestines as a content of hernial sac (46%) and omentum (30%) and about 24% of the cases had both small intestine and omentum.

Side of inguinal hernia

In our study of 25 cases, most of the cases (64%) presented with right sided inguinal hernia, about 36% presented with left sided inguinal hernia. This indicate that right sided inguinal hernia is common.

Type of hernia

In our study, majority of the patients had direct type of recurrent inguinal hernia about 64%, indirect recurrent inguinal hernia 16% and pantaloon recurrent inguinal hernia were 20%.

Previous operation

In our study, patient presented with recurrence of previous hernia repair, in previous open suture repair 38 and open mesh repair done with in 12 patient.

Mode of operation

In our study, the number of direct hernia were larger in number, the number of cases subjected to mesh repair were of the direct type. In the above quoted studies, the incidence of the number of direct hernias are

higher and hence the case who underwent surgery for this type is also higher.

Post operative complications

In my study, 22(57.9%) patients had post operative pain in open mesh repair, 4(33.33%) patients in open suture repair and 5(13.4%) patients had wound seroma in open mesh repair and 1(8.3%) in open suture repair. 4(10.6%) patients developed wound infection in open mesh repair and 4(33.33%) patient stitch site infection in open suture repair. Wound infection was treated with antibiotics according to culture and sensitivity reports. Seroma formation was treated by drainage and dressings. 3(7.9%) patients complained of urinary retention in open mesh repair and 2(16.6%) in open suture repair. There was no surgery related mortality and no recurrences in this study

Further study required in cases of laparoscopic repair of hernia in cases of recurrences as review of literature suggest that it is better go for posterior approach in case of anterior recurrence of hernia and anterior in case of posterior.

CONCLUSION

Direct hernia observed in majority of the recurrence. Open mesh repair is a better method of inguinal hernia repair than other conventional hernia repairs but post operative pain is most common complication after repair of recurrent hernia with mesh.

Open suture repair of hernia has higher recurrence rate and postoperative pain and disability is high.

REFERENCES

1. Eubanks WS: Hernia. In: *Sabiston Textbook of Surgery 16e*. 16 edn. Edited by Jr. CMT. Philadelphia, Pennsylvania: W.B. SAUNDERS COMPANY; 2001: 198.
2. Ira MR: Demographic and socioeconomic aspects of hernia repair in the United States in 2003. *The Surgical clinics of North America* 2003, 83(5):1045-1051.
3. Chevrel JP, Perez M, Lumbruso M, Morice P: [Recurrent inguinal hernia]. *Presse Med* 1991, 20(32):1543-1547.
4. Amid PK: Groin hernia repair: open techniques. *World J Surg* 2005, 29(8):1046-1051.
5. Bendavid R: Primacy, pell-mell paternity...praises and perils. *Hernia* 2005, 9(3):205-207.
6. Lau WY: History of treatment of groin hernia. *World J Surg* 2002, 26(6):748-759.
7. Patino J: A history of the treatment of hernia. In: *Hernia* 5th edn. Edited by Nyhus LM CR. Philadelphia: Lippincott; 2002: 17-28.
8. P. M. LAFFERTY, A. MALINOWSKA and D. PELTA Lichtenstein inguinal hernia repair in a primary healthcare setting. *British Journal of Surgery* 1998, 85, 793-796.
9. I. W. Mills, I.M. McDERMOTT and D.A. RATLIFF Prospective randomized controlled trial to compare skin and polypropylene for securing the mesh in inguinal hernia repair