

Efficacy Of Inguinal Hernia Repair By Prolene Hernia System

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Abstract

Hernia repair is the most commonly performed procedure in general surgery. Even though several techniques have been followed since ages none of them are without complications and recurrence. The objective of the present study is to look for the outcome of inguinal hernia repair with Prolene Hernia System in terms of post operative pain, post operative complications, duration of hospital stay, duration to return to normal activities and recurrence. All cases who presented with uncomplicated inguinal hernia who are more than 18 years were included in the study. Complicated hernias like obstructed and strangulated inguinal hernias presented as emergencies were excluded from the study. The mean VAS score at 72 hours postoperatively was 1.2. The mean duration of hospital stay was 3 days. During the follow up period of 6 months, no recurrence was noticed. The PHS is a tension free mesh repair that provides a complete closure of the myopectineal orifice. It is a feasible procedure with minimal postoperative pain and related complications. It shows acceptable short term results with low incidence of chronic groin pain and recurrence during the follow-up period.

Keyword: Inguinal hernia, Prolene hernia system, VAS score

Introduction

A hernia is the bulging of part of the contents of the abdominal cavity through a weakness in the abdominal wall.

“A protrusion of any viscus from its proper cavity is denominated a hernia. The protruded parts are generally contained in a bag by a membrane with which the cavity is naturally invested” Inguinal hernia repair is the most frequently performed procedure in general surgery ^[1]. The repair of a simple inguinal hernia or a recurrent hernia is not just sewing together of a defect in the musculature as was practised before. Present day hernia surgery needs more understanding of the functional anatomy and pathophysiology of the abdominal wall and inguinal region and the mechanism that help in prevention of occurrence of hernias.

The ideal inguinal hernia repair has to provide effective coverage of the myopectineal orifice, should be cost effective, have minimal operative and postoperative discomfort, have the lowest possible recurrence rate and allow rapid return to normal activities. The Lichtenstein technique was recommended for primary inguinal hernia. Despite several modifications, this technique is still known to have recurrence rates and associated morbidity [2].

The Prolene hernia system tension free mesh repair is a simple and straight forward procedure that doesn't require complex instruments, without compromising the safety and long term success of the repair. It permits a repair at the level of transversalis fascia with added security of onlay patch. It provides a complete closure of the myopectineal orifice and with least incidence of morbidity and recurrence as reported in various research studies [3, 4] and therefore is the need to study the outcome of inguinal hernia repair with Prolene Hernia System.

Methodology

This prospective clinical study comprises of 45 patients presenting with inguinal hernia admitted to surgical unit.

In this study 45 patients presenting with inguinal hernia were selected by Random sampling technique.

The observations and calculated means were subjected to statistical analysis. For statistical analysis SPSS version 20.0 software was used.

These patients presented with either swelling in the groin/ pain in the groin area of varying duration. Patients with these symptoms were admitted to surgical ward with the diagnosis of direct or indirect uncomplicated inguinal hernia. A detailed relevant clinical history was done as the proforma approved by the guide.

Investigations were carried out to assess the fitness of patients for surgery.

These included

1. Blood: Hb percentage/Total and Differential leucocyte Count/Bleeding Time and Clotting Time/Fasting/Random Blood suger/Blood Urea and Serum Creatinine.
2. Urine: Albumin/Sugar/Microscopy
3. Electrocardiogram
4. X-ray of the chest was done to rule out any respiratory pathology.
5. Ultrasound of the abdomen and pelvis was done to rule out benign prostatic hypertrophy.
6. Cardiac evaluation such as 2D ECHO, Pulmonary function test (PFT) evaluation of BPH in patients with associated Co- morbidities. Once the patient was fit from the respective specialists, only then the patients was planned for surgery.

After routine investigations, Patients were informed about the various techniques and advantages of the PHS mesh. In those patients who agreed, consent was taken and patients were prepared for surgery. Patients were subjected to Prolene Hernia system repair. All patients were given preoperative antibiotic prophylaxis with Injection Ceftriaxone 1 gm. Spinal anaesthesia was administered.

In the Post Operative Period, adequate analgesics and antibiotics given.

Postoperatively patients were monitored carefully and details regarding complications, incapacity to work were noted.

Patients were evaluated for immediate complications like post operative pain, hematoma and wound infection.

Pain was evaluated by patients own perception of pain based on Visual Analogue Score.

Seroma - evacuated when required

Infection - confirmed by culture and sensitivity and treated by drainage and proper antibiotics.

Patients were discharged between 3rd to 5th day when considered fit to go about their normal routine. Sutures were removed on the 8th to 10th post operative day.

Follow up

Patients were asked to visit after 1 month, 3 months & 6 months after surgery. They were advised to come earlier in case of complications. During the follow up late complications like chronic groin pain and recurrence were evaluated.

Results

Table 1: Pain – Mean Vas Score

Time	Vas Score
<24 hours	3.8
< 48 hours	2.3
< 72 hours	1.2

- Mean VAS score of cases in 24 hours was 3.8
- Mean VAS score of cases in 48 hours was 2.3
- Mean VAS score of cases in 72 hours was 1.2

Table 2: Immediate Post-Operative Complications

Post – operative	No. of cases	Percentage (%)
Hematoma	Nil	-
Seroma	3	6.7
Infection	Nil	-
Wound dehiscence	Nil	-

3 cases (6.7%) had seroma which was managed by aspiration & evacuation followed by compression dressing.

Table 3: Duration of Hospital Stay

Duration of Stay (days)	No. of cases	Percentage (%)
2	6	13.3
3	34	75.6
4	3	6.7
5	2	4.4

Majority (88.9%) of patients had a hospital stay of 3 days or less. Few patients had longer duration of hospital stay due to their associated comorbidities.

Table 4: Chronic Groin Pain

Chronic Pain	Nil	Minimal	Moderate	Severe
1 month	45(100)	1(2.2%)	0	0
3 months	44(97.8%)	1(2.2%)	0	0
6 months	45(100)	0	0	0

44 cases (97.8%) had nil pain in the groin after 3 month.

At 6 months, 100 % of the cases were pain free.

Discussion

Table 5: Comparison of post operative pain with other studies

	Day 1 VAS-Mean	Day 2 Vas-Mean	Day 3 VAS-Mean
Dalenback ⁵	3.5	2.5	2
Present Study	3.8	2.3	1.2

3 cases had seroma which accounted for 6.7 % of total cases. This was managed by aspiration & evacuation of seroma, and compression dressing and suture removal.

In a retrospective study conducted by Berende et al.^[6], the post operative wound infection rate was found to be 1.3%. In Yener et al.^[7] study, 10% had wound discharge, one had haematoma.

Mean duration of hospital stay was 3 days for PHS repair. Few patients had longer duration of hospital stay due to their associated comorbidities.

Mean duration of return to normal activities was 9.2 days. Kingnorth et al.^[8] concluded that the use of the PHS mesh results in a better post operative recovery in patients undergoing primary inguinal hernia repair. These results are attributed to less post operative pain and wound infection experienced by patients undergoing PHS repair.

In this study, one patient (2.2%) came with minimum pain at 1 month and one patient (2.2%) came with minimum pain in groin at 3 months during follow up. In a study by Faraj et al.^[9], 1.8% suffered from persisting pain. In a study by Nienhuijs and Rosman^[10], 8% reported pain at 8 years follow-up after an initial pain-free period.

None of the patients in the present study had recurrence. The patients were followed upto 6 months.

Table 6: Comparison of recurrence with other studies.

Study	Follow Up Duration	Recurrence Rate
A.Kingsnorth ^[8] et al.	6-12months	0%
Faraj ^[9] et al.	5.5years	5(2.3%)
Present study	6months	0%

Based on above chart, it is proved that PHS repair has the least recurrence rate and an ideal method in the treatment of inguinal hernia.

Conclusion

The Prolene Hernia System is a simple, straight forward technique without the need for complex instrumentation, and without compromising the safety of the procedure. Pre-peritoneal dissection is easy to master even though it is technically demanding in the initial cases of learning curve.

It is a tension free mesh repair that provides a complete closure of the myopectineal orifice. It is a feasible procedure with minimal postoperative pain and related complications. It shows acceptable short term results with low incidence of chronic groin pain and recurrence during the follow-up period.

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