

A Prospective Comparative Study between Laparoscopic Mesh Repair and Open Lichtenstein Mesh Repair of Inguinal Hernia

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Abstract: Inguinal Hernia is among the most encountered conditions. Comparison among laparoscopic and open methods show the advantages of Laparoscopic repair over the open method. **Aims and Objectives:** To compare the effectiveness and safety of laparoscopic (Totally extraperitoneal) and conventional open mesh repair (Lichtenstein) in the treatment of inguinal hernia. **Objectives:** To compare the following, in laparoscopic and open hernia repair: 1. Operating time. 2. Intraoperative & postoperative complications. 3. Postoperative pain and recovery. 4. Recurrence rate. **Materials and Methods:** The present study was carried out in the Department of General Surgery, Kamineni Institute of Medical Sciences, Narketpally. The study includes 50 patients (25 in each group) with inguinal hernia who were admitted and operated during the period from January 2019- December 2019. Type of operation (laparoscopy/open) Size of mesh used was 15X15 cm Laparoscopic and in Open hernioplasty was 7X15 cm. **RESULTS:** Intraoperative complications are less in laparoscopic group (0 %) compared to open group (4 %). Mean duration of surgery is more in laparoscopic repair i.e. 87 min compared to open mesh repair i.e. 64min and the P value is < 0.001 which is significant. Postoperative pain is less in laparoscopic group (8 %) compared to open group (16 %). Mean length of hospital stay is less in laparoscopic repair i.e. 3.92 days compared to open repair i.e. 7.80 days and the P value is < 0.001 which is significant. **Conclusion:** TEP group has got less intraoperative & postoperative complications compared to open group clinically but statistically it is not significant. Length of hospital stay is less in TEP group compared to open group. Operating time is more in TEP group than in open group. TEP repair has advantages of less complications & early recovery than open group.

Keywords: Inguinal hernia open laparoscopic tep lichtenstein mesh hernia repair comparative study

1. Introduction

- A Hernia is defined as an abnormal protrusion of an organ or tissue through a defect in its surrounding walls.
- Although there are many different types of hernias, they are usually related to the abdomen, with approximately 75% of all hernias occurring in the inguinal region.
- Lichtenstein tension free open mesh repair has remained the gold standard criterion in terms of long term outcome for many years
- Laparoscopic inguinal hernia repair is gaining popularity in the recent few years.
- Laparoscopic repair offers advantages in the form of smaller incisions, faster recovery and reduced recurrence.
- Because of the new approach to the groin from inside the abdomen, unique challenges and complications have been encountered.
- The standard method for inguinal hernia repair had changed little over the hundred years since Bassini introduced the modern era of herniorrhaphy in 1887.
- Annual statistics from various countries show that, despite many modifications introduced by Shouldice, McVay and others, 10-15% of inguinal hernia operations are for recurrent hernias.
- Post-operative pain is an important outcome to consider when choosing between laparoscopic and open repair of inguinal hernias.
- Laparoscopic repair has been associated with less post-operative pain than open repair.
- Laparoscopic hernia repair is more costly, difficult to learn, with a steep learning curve and carries the risk of serious visceral and or vascular injuries.

- Recurrence rates for endoscopic techniques are generally underestimated because most studies are either not prospective or do not include long-term follow-up evaluation.

Aim

To compare the effectiveness and safety of laparoscopic (Totally extra peritoneal) and conventional open mesh repair (Lichtenstein) in the treatment of inguinal hernia

Objectives

To compare the following, in laparoscopic and open hernia repair:

- Operating time.
- Intraoperative & postoperative complications.
- Postoperative pain and recovery.
- Recurrence rate.

Patients and Methods

The present study was carried out that includes 50 patients (25 in each group) with inguinal hernia between January 2019-March 2020 in a Tertiary care hospital.

Inclusion Criteria:

All Male patients presented with uncomplicated unilateral inguinal hernia. •Age between 18 years - 60 years.

Exclusion Criteria

- Age group below 18 and above 60 years. •Female patients
- Patients undergoing other combined procedures.
- Patients with complicated (with signs of obstruction/strangulation) hernias & bilateral inguinal hernias.
- Patients with co-morbidities (hypertension, diabetes mellitus, hyper/hypothyroidism, bronchial asthma etc..)

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- Patients in whom laparoscopic hernia repair is contra-indicated.

Following statistical methods were applied in the study:

- Chi square test.
- Student t test.
- Mean+SD are used for quantitative variables.

2. Observation & Results

Table 1: Distribution of Patients according to type of surgery (n=50)

Type of Surgery	No. of Cases	Percentage
Laparoscopic repair	25	50
Open mesh repair	25	50
Total	50	

Table 2: Distribution of patients according to Duration of surgery (N=50)

Duration of Surgery	Type of Surgery	
	LAP (N=25)	Open (N=25)
<60 Min	2 (8%)	16 (64 %)
60-90 Min	20 (80%)	7 (28 %)
> 90 Min	3 (12%)	2 (8 %)
Total	25 (100%)	25 (100 %)

Table 3: Distribution of cases according to intraoperative complications (n=50)

Intra Operative Complications	Type of Surgery	
	LAP (N=25)	Open (N=25)
Bladder Injury	0	0
Bowel Injury	0	0
Injury to artery to VAS defenders	0	0
Vascular Injury	0	1 (4%)
Total	0	1 (4%)

Table 4: Distribution of patients according to post operative complications (N=50)

Post Operative Complications	Type of Surgery	
	LAP (N=25)	Open (N=25)
Pain	2 (8%)	4 (16%)
Urinary Retention	2 (8%)	4 (16%)
SEROMA/ Haematoma	1 (4%)	4 (16%)
Mesh Infection	0	0
NEURALGIA	0	2 (8%)
Testicular Swelling	1 (4%)	4 (16%)
Total	6 (24%)	18 (72%)

3. Discussion

- This study compares the outcomes in patients with unilateral inguinal hernias treated by laparoscopic repair with general anaesthesia to that of unilateral inguinal hernia repair treated with tension free hernioplasty as described by lichtenstein with spinal anaesthesia.
- The following were compared in both the groups: Intraoperative Complications like Bladder injury, Bowel injury, Vascular injury) length of hospital stay & Recurrence of hernia at intervals of 3 months and 6 months.
- Incidence of inguinal hernia was highest in the age group ranging from 51-60 years.

- 1 patient (4%) in open group had vascular injury. Intraoperative complications are less in laparoscopic group (0%) compared to open group (4%). It is not significant with this sample size.
- Mean duration of surgery is more in laparoscopic repair i.e 87 min compared to open mesh repair i.e. 64min and the P value is < 0.001 which is significant.
- Postoperative pain is less in laparoscopic group (8%) compared to open group (16%).
- Urinary retention is 16% in open group & 8% in laparoscopic group. •Incidence of seroma is 16% in open group & 4% in LAP group.
- There is no incidence of wound/mesh infection.
- Testicular swelling was seen in 16% in open group & 4% in TEP group. •Neuralgia is seen in 8% of open repair group & 0% in TEP group.
- Mean length of hospital stay is less in laparoscopic repair i.e. 3.92 days compared to open repair i.e 7.80 days and the P value is < 0.001 which is significant.
- Postoperative complications are more in open group compared to laparoscopic group, but according to statistical analysis p value is not significant which signifies there is not much difference in postoperative complications in both the groups with this sample size.
- There was no recurrence in both TEP & open group noted during the follow up period of 3 months & 6 months.

Length of Hospital Stay	LAP	OPEN
Sven Beingman et al	5 days	7 days
Present study	3.92 days	7.8 days

Recurrence	LAP	OPEN
Sven Beingman et al	2.2%	0%
Present study	0%	0%

Duration of surgery	LAP	OPEN
Sven Beingman et al	50 min	4.5 min
Present study	87 min	64 min

Intraoperative Complications	LAP	OPEN
Neumayer L et al	4.8%	1.9%
Present study	0%	0%

4. Conclusion

- The present study is prospective comparative study between the Lichtenstein tension free mesh repair and the TEP Laparoscopic inguinal hernia mesh repair.
- The study was conducted with an intention to prospectively compare the intraoperative & post operative complications, operating time, length of hospital stay & recurrence between Lichtenstein and TEP laparoscopic hernia repair.
- TEP group has got less intraoperative & postoperative complications compared to open group clinically but statistically it is not significant.
- Length of hospital stay is less in TEP group compared to open group. •Operating time is more in TEP group than in open group.

References

- [1] Mark A. Malangoni & Michael J. Rosen. Hernias In: Sabiston DC, Townsend CM, eds. *Sabiston Text book of Surgery: The Biological Basis of Modern Surgical Practice*. 18th ed. Philadelphia, Pa.: Saunders/Elsevier; 2008:873-916.
- [2] McCormack K, Scott NW, Go PM, RossS, Grant AM. Laparoscopic techniques versus open techniques for inguinal hernia repair. *Cochrane Database Syst Rev* 2003;1:CD001785.
- [3] Amid PK, Shulman AG, Lichtenstein IL. Open “tension-free” repair of inguinal hernias: the Lichtenstein technique. *Eur J Surg*1996; 162:447-53.
- [4] S.K. Jain, Amit Gupta, Sunil Kumar, R.C.M. Kaza. Laparoscopic vs. open inguinal hernia repair: A systematic review of literature *Asian Journal of Medical Sciences*; Jul-Sep 2014; Vol 5; Issue 3; 10-14.
- [5] Rutkow IM: Epidemiologic, economic, and sociologic aspects of hernia surgery in the United States in the 1990s. *SurgClinNorthAm*78:941, 1998. [PubMed: 9927978]
- [6] McEvedy BV. Inguinal hernia: the rectus- sheath approach. *West Afr Med J*. 1958; 7: 106.
- [7] Abrahamson J. Hernias. *Maingot’s Abdominal operations* 10th ed. McGraw Hill, 2001; 479- 580.
- [8] Lichtenstein IL, Shulman AG, Amid PK: Use of mesh to prevent recurrence of hernias.*PostgradMed*87:155, 1990. [PubMed:2296563]
- [9] Glassow F: The Shouldice Hospital technique.*IntSurg*71:148, 1986.[PubMed: 3771116]