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Original Research Paper

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COMPARATIVE STUDY ON SUTURE FIXATION VS TACKER FIXATION FOR LAPAROSCOPIC INGUINAL HERNIA REPAIR - TAPP

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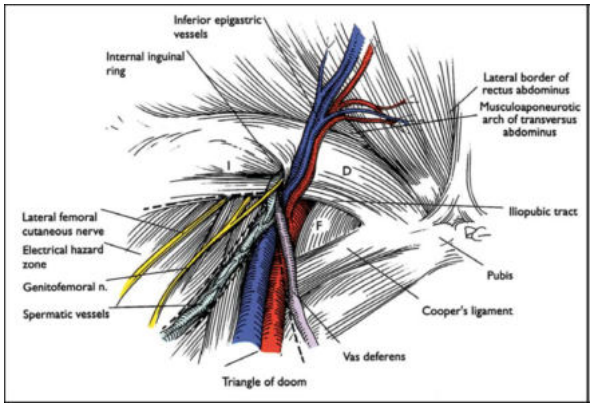
ABSTRACT Laparoscopic hernia repair has gained wide popularity in recent years. The procedure has proved its superiority over its open counterpart in various aspects postoperatively. The most important obstacles in making the procedure popular for common people are material cost and acquiring skill for the procedure by the surgeon. In this study we compared the results of suture fixation of mesh and tacker fixation of mesh.

KEYWORDS : Inguinal Hernia, Tapp, Mesh, Tacker

INTRODUCTION

Laparoscopic hernia repair has gained wide popularity in recent years. The procedure has proved its superiority over its open counterpart in various aspects postoperatively. The most important obstacles in making the procedure popular for common people are material cost and acquiring skill for the procedure by the surgeon. In view of the above problems we are doing suture fixation of the mesh by Prolene 00 at two points which fixes the mesh to the anterior abdominal wall. Reperitonealisation over the mesh is done by again suturing intracorporeally. This procedure obviates the cost of fixation device.

Laparoscopic Anatomy Of Inguinal Region



Techniques of Mesh fixation

During the repair of an inguinal hernia, sutures or tacks are generally used to secure the prosthetic mesh in place. In TAPP repairs the peritoneum is closed using sutures or tacks. Non-mechanical methods include self-fixating meshes or glue and the non fixation of mesh. Similarly, closing the peritoneum with sutures may be less traumatic than the use of tacks, thus resulting in less postoperative pain.

A number of randomised controlled trials (RCTs) have investigated the merits of different types of mesh fixation. To date, however, a consensus opinion regarding which method is most advantageous has not been reached. Similarly, there is no consensus on the optimal technique for peritoneal closure in TAPP repair. At present, therefore, the choice of mesh fixation and peritoneal closure method depends on the individual surgeon's practice.

AIM OF STUDY

To compare the effects of different methods of mesh fixation-Tacker fixation and Suture fixation in laparoscopic inguinal hernia repair-TAPP in adults.

MATERIALS AND METHODS

All the Inguinal hernia patients who attended the Minimal Access Surgery OPD of Madras Medical College, Chennai from 2016 to 2018 were considered for the study. Those who were between 18-70 years of age, without any comorbidities, fit for General Anaesthesia under ASA I & II were included in this study. Above 70 years, comorbid illnesses, not fit for GA under ASA I &II were excluded.

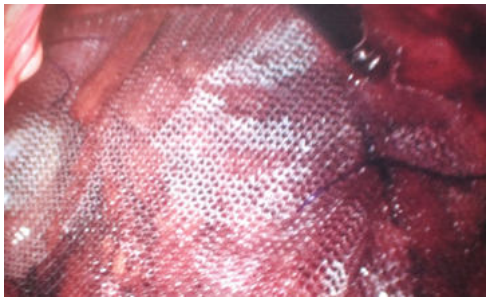
Finally a sample size of 110 patients with Inguinal hernia were selected for the study. Proper consent was obtained. Two groups of 55 patients in each group were formed alternatively.

The first group was taken up for surgery – TAPP with Light weight 15 x 15 cms Prolene mesh fixation done by Protack Tackers.

Tacker fixation of Mesh

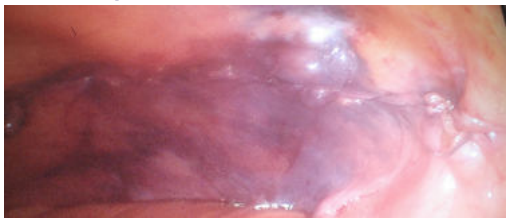
The second group was taken up for surgery- TAPP with Light weight 15 x 15 cms Prolene mesh fixation done by 00 Prolene Sutures by intracorporeal technique.

Suture fixation of Mesh



In both groups peritoneal flaps were closed by suturing.

Suture closure of peritoneum



In both the groups, the primary outcome included Recurrence of hernia, Inguinodynia, ie chronic groin pain. Secondary outcome included seroma formation, immediate post-operative pain.

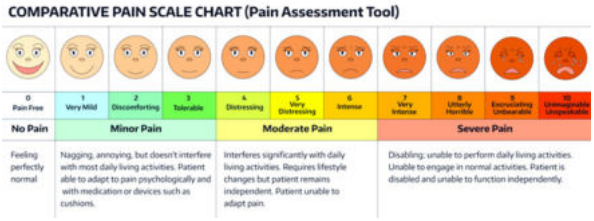
DEFINITIONS

Inguinodynia or Chronic groin pain is defined as groin pain persisting at least 3 months after the index operation.

Recurrence is defined as clinical or sonologic reappearance of inguinal hernia.

Complications are defined as any complications requiring further procedures in the theatre during the same surgical admission.

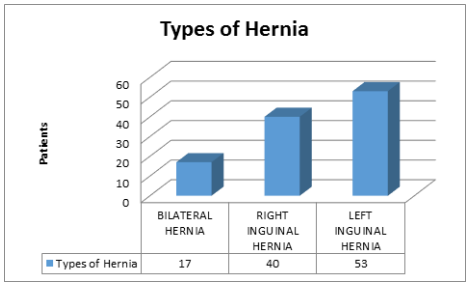
Postoperative pain defined as VAS (visual analog scale) immediately after and during 1 week of surgery.



All these findings were noted and interpreted. The findings were analysed statistically.

RESULTS

In this study there were 40 patients with right sided inguinal hernias, 53 patients with left sided inguinal hernias and 17 patients with bilateral inguinal hernias. Direct or Indirect hernias, were out of the scope of this study.



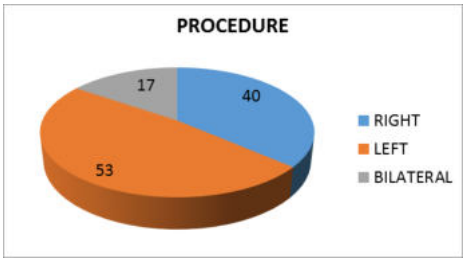


TABLE 1 : FREQUENCY OF PROCEDURE OF HERNIA

	FREQUENCY	PERCENT
RIGHT	40	36.4
LEFT	53	48.2
BILATERAL	17	15.5
TOTAL	110	100.0

TABLE 2: COMPLICATION AMONG TACKER FIXATION

TACKER FIXATION	COMPLICATION -NO	COMPLICATION -YES	TOTAL
NO	0	0	0
YES	53	2	55
	55	2	55

CHISQUARE - 0.345

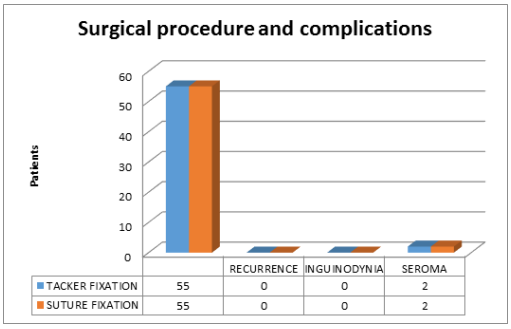
Of the 55 patients in the Tacker fixation arm, no patients had recurrence, no patients had inguinodynia and 2 patients developed seroma formation which were conservatively managed by scrotal support and enzymatic preparations and anti inflammatory drugs.

TABLE 2: COMPLICATION AMONG SUTURE FIXATION

SUTURE FIXATION	COMPLICATION -NO	COMPLICATION-YES	TOTAL
NO	0	0	0
YES	53	2	55
	55	2	55

CHISQUARE - 0.345

Of the 55 patients in the Suture fixation arm, no patients had recurrence, no patients had inguinodynia and 2 patients developed seroma formation which were conservatively managed by scrotal support and enzymatic preparations and anti inflammatory drugs.



Both tacker fixation and suture fixation had no recurrence, no inguinodynia. The results were comparable as for as seroma is concerned ie 2 cases in each group.

DISCUSSION

Laparoscopic hernia surgery benefits patients because it produces less pain than open hernia, enables patients to return to normal activity and work more quickly. In spite of several proven benefits of lap.hernia repair few factors prevent the lap hernia repair from becoming popular than lap. cholecystectomy. The most common factor is the material cost. In lap.hernia repair, fixation device is ideally required which is expensive. Secondly surgeon's learning curve is long. Lap. hernia is a challenge to teach and learn. TAPP repair is more anatomical friendly for learner but requires good suturing skills in ergonomically different situations while suturing the peritoneum. On the other hand, in open repair no such material cost is required. Hence poorer sections of the people find it hard to accept the procedure in spite of overall advantages and even people without health insurance coverage are reluctant to accept the procedure most of the time because of the cost. Suture fixation if used in TAPP repair eliminates the use of the expensive fixation device.

In literature , recurrence rate is about 5-15 %. In our study, we had no recurrence. Inguinodynia which has been described to occur at a rate of upto 30 % in literatures has not been encountered in our study. The seroma formation is reported in about 5-25 % in literatures whereas in our study we had 3.63%.

SUMMARY

The present comparative study of suture fixation vs tacker fixation of mesh in Laparoscopic inguinal hernia repair-TAPP has been carried

out in the Department of Minimal Access Surgery, Madras Medical College, Chennai-3 from 2016 to 2018.

Based on the data results obtained in the study the following conclusion can be drawn.

Both tacker fixation and suture fixation had no recurrence, no inguinodynia. The results were comparable as for as seroma is concerned ie 2 cases in each group.

CONCLUSION

In this study, it has been clearly proven that Suture fixation of mesh has produced equal results as that of Tacker fixation of mesh with respect to recurrence, inguinodynia , seroma formation and post operative pain. Tackers being costly, suture fixation is a cost effective alternative without compromising on patients safety. In a country like our India where the affordability is poor, Suture fixation may ideally be practised.

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