



PERITONEAL FLAP CLOSURE METHODS IN TRANSABDOMINAL PREPERITONEAL (TAPP) HERNIA REPAIR; SUTURE OR TACKER. A COMPARATIVE STUDY

General Surgery

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ABSTRACT

Background : The aim of this study to compare between suture or tacker Peritoneal Flap closure method in Transabdominal Preperitoneal (TAPP) hernia repair.

Method: A prospective study was undertaken of 50 patients with a history of Inguinal hernia who underwent Transabdominal Preperitoneal (TAPP) hernia repair. We compare pain (using the VAS score), hospital stay, time return to work & 30 days recurrence rate.

Results: There were no significant difference in pain score at 12 & 24 hours ($p > 0.05$) but there is more pain in tacker group than suture group ($p < 0.05$). Hospital stay was longer in tacker group than suture group ($p < 0.05$) & return to work was same in both group ($p > 0.05$). There was no difference in post-operative inguinal hernia complications.

Conclusion: There was no difference among the two technique of peritoneal closure with tacker & peritoneal closure with suture in respect of early post-operative hours (12 hours & 24 hours) pain but there is more pain in tacker group in late hours (48 hours). Similarly, there is no difference in timing of return to work & post-operative complications but hospital stay is more in tacker peritoneal closure group than suture peritoneal closure group.

KEYWORDS

INTRODUCTION

History of hernia repair is very rich and since ancient times surgeons have tried to improve it bit by bit. It is in fact a game of surgical anatomy, the one who understands the anatomy of Groin, can succeed in a way or the other to do a perfect repair. Herniorrhaphy is one of the commonest general surgical procedures performed and about 700,000 hernia operations are performed each year in the United States which is still on rise.¹ In India, the estimated annual incidence of inguinal hernias is 1,957,850.²

There are various kind of procedures in open inguinal hernia repair e.g Bassini, Shouldice, Stoppa, McVay, Halstead & Lichtenstein.³ Laproscopic hernioplasty introduced in 1990 for the first time.⁴ The advantages of this method compared to open are good cosmetic, less post-op pain, less hospitalization, early return to work, less complications & low rate of recurrence. Laparoscopic inguinal repair still finds resistance among surgeons today.^{5,6,7} Main reasons are higher direct cost, need for general anesthesia and eventual higher rate of major complications associated with laparoscopic repairs.^{8,9} Another difficulty related to laparoscopic approach is the greater surgical complexity associated with the need to identify a "new" anatomy of posterior inguinal wall, which is not usual for general surgeons.^{8,10} Specific training is required to acquire proficiency.

Laparoscopic hernia repair includes TAPP (Transabdominal Preperitoneal) & TEP (Total extra-Peritoneal). TAPP inguinal hernia repair entails the development of a peritoneal flap in order to reduce the hernia sac and create a preperitoneal space in which to place mesh. Many methods for closure of the PF exist including sutures & tacks.

The objective of the present study was to compare parietal peritoneal closure techniques i.e. suture and tacker in TAPP (transabdominal preperitoneal) hernia repair.

MATERIALS AND METHODS

Source of data:

The study will be conducted on 50 cases of TAPP repair for inguinal hernia compared with an age and sex match normal population in Mahrani Laxmi Bai Medical College, Jhansi (U.P.) between December 2017 to June 2019. Written informed consent was obtained from all the participants. The patients were divided into 2 groups, peritoneal flap closure by sutures in first group & by tackers in second group. Sample size was calculated at 25 in each group. Pain was

calculated using the visual analogue scale (VAS) score system on 12, 24 & 48 hours. In addition, hospital stay, time return to work & 30 days recurrence rate were also documented. To analyze data, Chi square test & t-test were run in SPSS, version 22.

Method of collection of data

INCLUSION CRITERIA:

- All patient who will be underwent TAPP inguinal hernia repair.

EXCLUSION CRITERIA:

- All patient operated for other than TAPP technique.
- Patients, who were initially operated with the TAPP technique and a change to open approach will necessary also excluded.

RESULTS

There is no significant difference in age, gender & surgical technique among two groups ($p > 0.05$). There were no significant difference in pain score at 12 & 24 hours ($p > 0.05$) but there is more pain in 48 hours in tacker group than suture group ($p < 0.05$). Hospital stay was longer in tacker group than suture group ($p < 0.05$) & return to work was same in both group ($p > 0.05$). There was no difference in post-operative inguinal hernia complications like seroma, wound infection, urinary retention, ileus and bleeding ($p > 0.05$) but suture peritoneal closure surgery is cheaper than tacker closure surgery.

DISCUSSION

There is no significant difference in age, gender & surgical technique among patients undergone laproscopic inguinal hernia surgery. Thus, it can be stated that the two groups were in homogenous in term of age, gender & surgical technique and these factors could not have affected our outcomes.

There are few studies comparing peritoneal closure with suturing to peritoneal closure with tackers. In some previous studies, peritoneal closure with tacker & peritoneal closure with suturing were compared.^{11,12,13} In some studies, peritoneal closure with suturing was compared with other techniques of laproscopic inguinal hernia repair.^{14,15,16,17} In some other studies, peritoneal closure with tacker was compared with other techniques of laproscopic hernia repair surgery.¹⁸ The finding of Ross et al. in 2015 were in line with our results. In their study, post-operative pain score in suture closure group was lower than the tacker closure group.¹³

Oguz et al. in 2015 found that pain score was lower at 7 & 30 days after

surgery in suture closure group than tacker closure group. In 21 month follow up there was no recurrence in the two groups.¹² Lee et al. in 2018 revealed same results as this study. They found no difference in hernia recurrence rate between patients undergone inguinal hernia surgery with suturing versus non-suturing of peritoneum.¹⁵ In the study by Ross et al in 2017, they concluded that there is no difference in inguinal hernia repair between laproscopic inguinal hernia repair using tacker, suture & staples.¹⁶

Kitamura et al. in 2013 obtained the same results as ours, that is, they didn't find a significant difference in hernia recurrence in laproscopic hernia repair using tacker & suture. Moreover there is no difference in the degree of pain between the groups of peritoneal closure with tacker & suture.¹⁴

Sajad et al. performed a meta analysis in 2012. Congruent with our finding, they did not find any difference in postoperative pain & hernia recurrence between patients undergone closure with tacker & those without mesh fixation.¹⁷

In our study, hospital stay was more in tacker closure group than suture closure group, but Ross et al. in 2015 showed that there is no difference in hospital stay after TAPP inguinal hernia surgery among the two groups of peritoneal closure with tacker & suture.¹³

Also, Lee et al. in 2018 concluded that there is no difference in hospital stay between inguinal hernia repair surgery regarding peritoneal closure with suturing versus non-suturing.¹⁵

There is no difference in returning to normal activity after inguinal hernia repair surgery among the two groups. Lee et al, in 2018 found that time to return to normal daily activity in patients with peritoneal closure with suture less than other group.¹⁵

Finally, there is no difference between two groups in terms of post-inguinal hernia repair surgery complications e.g seroma, wound infection, urinary retention, ileus and bleeding.

In line with our results, Ross et al. in 2015 concluded that there is no difference in post-inguinal hernia surgery complications among the groups of peritoneal closure with tacker and suture.¹³ Kitamura et al. in 2013 concluded that there is no difference in wound infection & bowel obstruction between peritoneal closure with tacker & suture.¹⁴ Lee et al in 2018 ascribed that there is no difference in TAPP inguinal hernia repairing surgery complications between peritoneal closure with tacker & suture.¹⁵

In a meta analysis performed by Sajad et al in which there was no difference in complications after inguinal hernia surgery between the group with tacker peritoneal closure & the group without mesh fixation.

CONCLUSION

According to our findings, there was no difference among the two technique of peritoneal closure with tacker & peritoneal closure with suture in respect of early post-operative hours (12 hours & 24 hours) pain but there is more pain in tacker group in late hours (48 hours). Similarly, there is no difference in timing of return to work & post-operative complications but hospital stay is more in tacker peritoneal closure group than suture peritoneal closure group.

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