# RANDOMISED CONTROL STUDY COMPARING TACKER FIXATION AND NON-FIXATION OF ANATOMICAL SHAPED THREE-DIMENSIONAL MESH IN LAPAROSCOPIC TOTAL EXTRA PERITONEAL REPAIR (TEP) FOR INGUINAL HERNIA

**PAWANINDRA LAL**[1] MS, DNB, FRCS (Ed, Glasg, Eng, Irel), FACS, FAMS, FFSTEd., **SANTHOSH N**[2] MS, DNB, FMAAS,
**ANUBHAV VINDAL**[1] MS, DNB, FRCS (Ed, Glasg) FACS,FAMS, **TUSHARINDRA LAL**[3] MBBS
[1] Maulana Azad Medical College, New Delhi, India, [2] Dr DY Patil Medical College, Pune, India, [3] Sri Ramachandra Institute of Higher Education & Research, Chennai, India

## Introduction

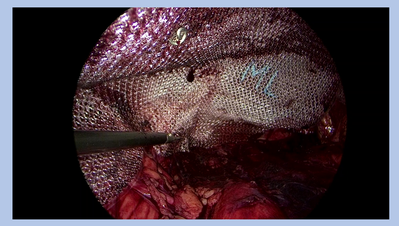
While flat meshes have been used in totally extra peritoneal (TEP) repair for more than two decades, anatomically shaped three dimensional meshes have advantage of being congruent to shape of myopectineal orifice and offer advantage of easy placement in preperitoneal space without any need of fixation. However, safety and efficacy of placement of these anatomical meshes without fixation has not been well evaluated. The present study was designed to compare TEP using anatomical mesh with fixation using tackers and that without using fixation in terms of intra-operative parameters, post operative pain and short-term complications.

## Materials and Methods

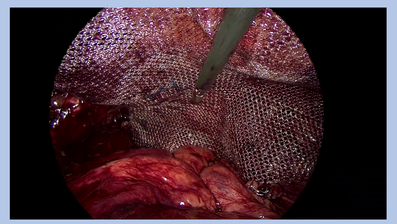
Thirty adult patients meeting all inclusion criteria were randomised into two groups- Group A- Fixation and Group B- Non-fixation. Various intraoperative parameters were noted including final diagnosis, operating time, mesh deployment time, size of mesh and complications like peritoneal tear, vascular/nerve/vas deferens injury. Post operative pain was noted using VAS pain scoring system at 24 hours, 72 hours, 1 week, 1 month and 3 months. Analgesics requirement (Inj. Diclofenac 75 mg TDS for 1 day and Tab. Diclofenac 50 mg SOS), duration of hospital stay, time to return to work, complications and recurrence at 3 months were noted.

## Results

Both tacker fixation group and non-tacker fixation group were comparable in terms of age, side and size of hernia. Mean operative time was 74.4 and 70.4 minutes (p- 0.617) respectively in tacker and non-tacker groups. There was no statistically significant difference between mesh deployment time in the two groups (180 versus 163 seconds; p- 0.171). There were no significant complications in either groups. There was no difference in the two groups in the VAS score at all time points except at 1 week (p- 0.080 to 0.317). However, the analgesic requirement was significantly less in the non fixation group (0.018). There was no statistically significant difference in duration of hospital stay (p- 0.9) and return to work (p- 0.669) between the two groups.



Mesh fixation using tackers



Mesh fixation without tackers

| Variables No. (%) | TEP Fixation (N=15) | TEP Non-Fixation (N= 15) | P Value |
|---|---|---|---|
| **Duration of Surgery** | | | |
| Mean (minutes) | 74.4 ± 12.28 | 70.4 ± 10.58 | 0.617 |
| **Pain (VAS)** | | | |
| 24 hours | 3.867 ± 1.302 | 3.267 ± 0.703 | 0.080 |
| 72 hours | 2.0 ± 0.756 | 1.667 ± 0.724 | 0.165 |
| 1 week | 0.733 ± 0.884 | 0 | **0.003*** |
| 1 month | 0 | 0 | 1.000 |
| 3 months | 0.133 ± 0.516 | 0 | 0.317 |
| **Analgesic Requirement** | | | |
| Mean | 7.267 ± 3.731 | 5.067 ± 1.624 | **0.018*** |
| **Duration of Stay** | | | |
| 24 hours | 12(80%) | 13(86%) | 0.990 |
| 48 hours | 2 (13%) | 1(6%) | 0.830 |
| 72 hours | 1(6%) | 1(6%) | 1.000 |
| **Time taken for Return to work** | | | |
| Mean | 6.74 ± 1.54 | 6.16±1.52 | 0.699 |

## Conclusion

No difference in intra operative parameters was found between laparoscopic totally extraperitoneal repair with tacker fixation and non-fixation using anatomical shaped three-dimensional mesh. No difference was found in the immediate post-operative and short-term complications or recurrence rate between tacker fixation and non-fixation. Non fixation of anatomically shaped three-dimensional mesh is as good as fixation in all respects with the added advantage of reduced post-operative pain, reduced analgesic usage and reduced cost (no cost of tacker).`