STUDY OF POLYPROPYLENE MESH WITH OXIDIZED REGENERATIVE CELLULOSE (ORC) ABSORBABLE PLUG IN PRE-PERITONEAL REPAIR OF INGUINAL HERNIA

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AIM

To compare the effectiveness of laparoscopic trans abdominal pre-peritoneal (TAPP) repair using polypropylene mesh with oxidized regenerative cellulose (ORC) absorbable plug (TAPP-MPR) versus TAPP repair using mesh only techiniques of inguinal hernia repair.

METHODS AND MATERIAL

A prospective clinical study was conducted in 80 patients with inguinal hernia for a period of 18 months. Patients were randomized into two groups- TAPP using mesh only and TAPP –MPR groups.

- **Procedure :** In TAPP, polypropylene mesh of size 7.5 x 15 cms was used. In TAPP-MPR, the size of the mesh used was 5cms bigger in diameter than the size of the defect. ORC Plug was 2/3rd the size of the defect and fixed to the mesh. The mesh-plug complex was inserted via the trocar and plug was placed in the defect, mesh was spread out evenly. Tacks were used for fixation in an inverted L-shaped manner to avoid vessel/nerve damage. (Fig.1).
- Postoperative pain, hospital stay, complications and follow-up were measured statistically according to the final type of repair done for the inguinal hernia.
- Patients were followed up for a minimum period of 6 months post operatively for recurrence.

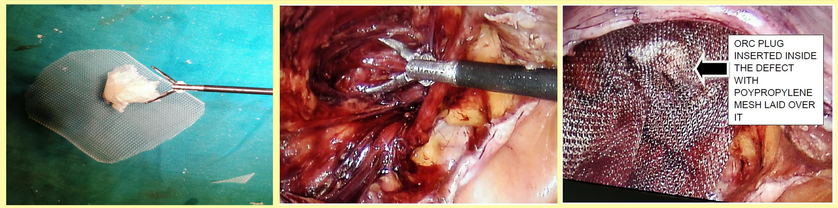


Figure. 1: Mesh- Plug complex placed over the defect & fixed

R ESULTS

- There were lesser incidences of seroma formation, cord edema and inguinodynia in TAPP MPR group.
- The inguinal pain assessed using VAS Score at various times, recorded at post-operative day 1 and at 3 & 6 months postoperatively was comparatively lower in the MPR group compared with that in the mesh repair group.
- TAPP MPR showed lesser incidence of delayed complications such as recurrence and chronic pain on follow-up at 6 months.
- There was no other significant difference in the two groups in terms of mean duration of surgery, size of mesh used, blood loss and conversion to open rates.

	TAPP with Mesh (N=36) No. Of cases	TAPP with Mesh &Plug (N=44) No. Of cases	P Value
Early post operative Complications			
1. Seroma Formation	10	5	0.0629
2. Cord Oedema	4	1	0.1063
3. Inguinodynia	9	2	0.0086
4. Mesh Migration	1	0	0.7388
5. Hematoma formation	0	0	0.000
Post operative VAS on day 1			
1. Mild (1-3)	6	17	0.03
2. Moderate (4-6)	20	25	0.9106
3. Severe (> 6)	10	2	0.004
Delayed post-operative Complications			
1. Recurrence	1	0	0.7388
2. Chronic pain (VAS>3)	3	1	0.5899

DISCUSSION

The success of hernia surgery in terms of minimal complications, technique and recurrence depends largely on the surgeon's understanding of the anatomy and physiology of the surgical area as well as knowledge of how to use most effectively the currently available techniques and materials.[1]

Advantages of ORC Plug: Soft, produces acidic medium (prevents infection), completely absorbed in a period of 1-6 weeks, offers tension free repair (thereby reducing the chances of inguinodynia)

Advantages of Mesh-Plug complex: reduced exposure of plug to intrapeitoneal organs, less chances of erosion and mesh migration; lesser chances of mechanical trauma to surrounding structures (Mechanical triggers, such as trauma to the ilioinguinal and genitofemoral nerves and cicatrisation, are the main causes of chronic pain following inguinal hernioplasty.[2])

CONCLUSION

This study concludes that TAPP with Mesh- ORC Plug repair is easily applied and is comparable to TAPP with mesh repair in terms of intraoperative and postoperative complications, conversion to open surgery, postoperative pain, quality of life and recurrence rate. However, further studies are required to corroborate these findings by conducting TAPP using ORC plug repair in a large study group in a multicentric study.

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