

A Comparative Study on Outcomes Between Extraperitoneal (ETEP) Vs Intraperitoneal. (IPOM) Repair in The Management of Hernia.

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Introduction

Ventral hernia repair is one the most common surgical procedure performed.Hernia repair includes simple closure (primary repair) or use of prosthetic materials (mesh).Option feasible includes onlay, sublay, preperitoneal and intraperitoneal.

IPOM (intraperitoneal onlay Mesh) is the prevailing procedure for ventral and incisional hernia repair.

Many newer techniques have emerged in response to the numerous postoperative complications.

eTEP (extended totally extraperitoneal repair) technique has been reported to be much safer and effective.

Aims & Objectives

Aim: To compare the efficacy of IPOM and eTEP in uncomplicated ventral hernia repair.

Objectives

- To compare both these techniques in terms of post operative pain relief and hospital stay.
- To evaluate the superiority of both techniques in terms of peri-operative morbidity.

Materials & Methods

Study Design	Prospective Randomised Interventional Study
Study Population	18-60 years with uncomplicated primary or incisional hernia
Study duration	From Oct 2022 to April 2023 with a followup of 6 weeks.
Study Setting	ASRAMs, Eluru
Sample Size	40 Patients
Sampling Method	Non Probability consecutive sampling

Table 1

Inclusion criteria

Patients with uncomplicated primary or incisional ventral hernia.

Exclusion criteria

Patients with complicated hernias, severe cardiopulmonary disease and those unfit for general anaesthesia.

IPOM procedure

- Under GA, pneumoperitoneum was created using verses needle and 3 ports placed on left side.
- Hernia contents were reduced using sharp and blunt dissection.
- Composite dual side mesh placed and fixed with transfacial sutures and absorbable tackers with at least 5 cm coverage of the defect in every direction.



Figure 1

e-TEP Procedure

- Pre-operative marking of linea alba, linea semilunaris and hernia site is done.
- Under GA, approximately 20mm incision made about 5 cm above the umbilicus and subcutaneous tissue dissected to the point of anterior rectus sheath.
- After sharp incision of fascia, muscle was retracted and posterior rectus sheath visualised.

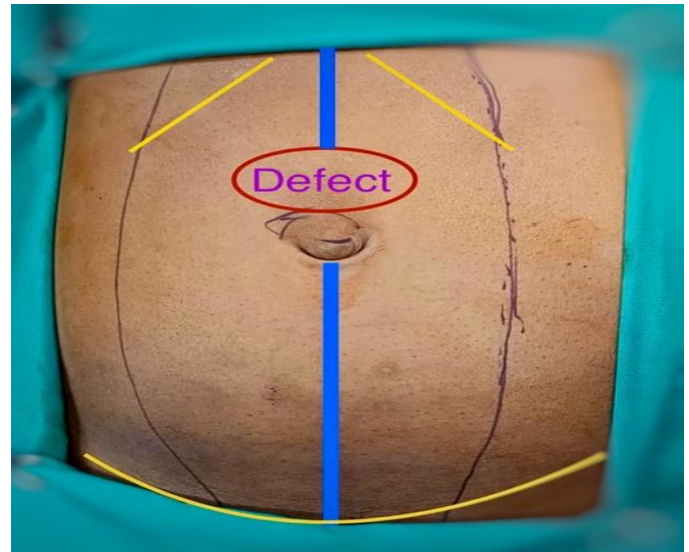


Figure 2

- Retrorectus plane was created using SPACEMAKER. Ports were placed as shown in the inset, C/L dissection done in 'BOTTOM'S UP' manner.
- Linea Alba attachment dissected with scissors b/l, dissection continued to the level of 5cm above hernial defect cranially.
- Lateral dissection done until point of semilunaris line in both sides. Hernial defect was carefully dissected pushing the sac intraperitoneally.

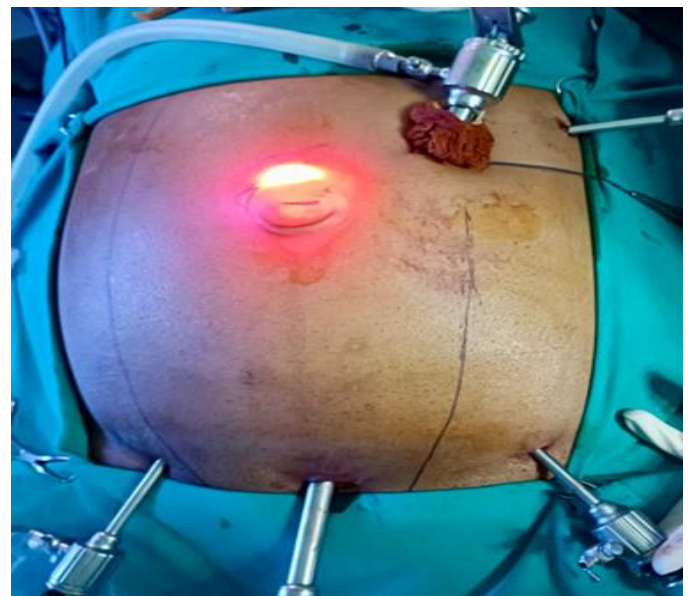


Figure 3

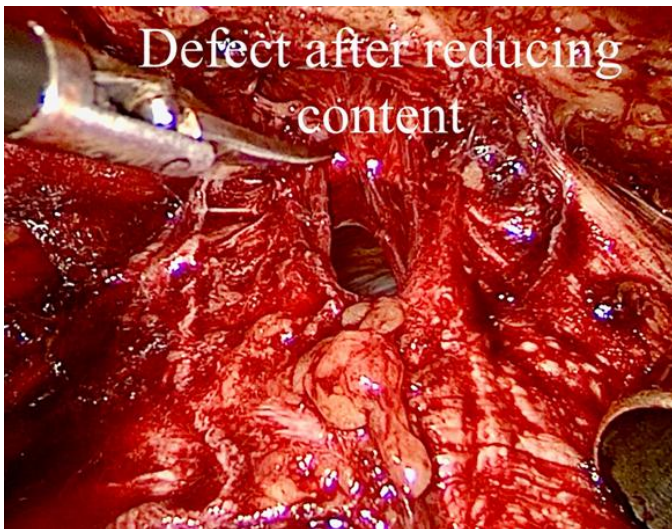


Figure 4

- Accidental pneumoperitoneum is addressed by placing a 5 mm port or veress needle at palmar's point.
- Plication of the linea alba was done with barbed sutures cranio caudally in continuous fashion including the hernial margins in the suture.
- After internal measurement of the created space a 15 x 15 cm microporous prolene mesh is fashioned and reinforced and not anchored.



Figure 5

- Pneumo is released under vision ensuring proper mesh position sandwiched between the muscle and posterior rectus sheath.
- Pressure dressing applied and patients were discharged on POD 2.

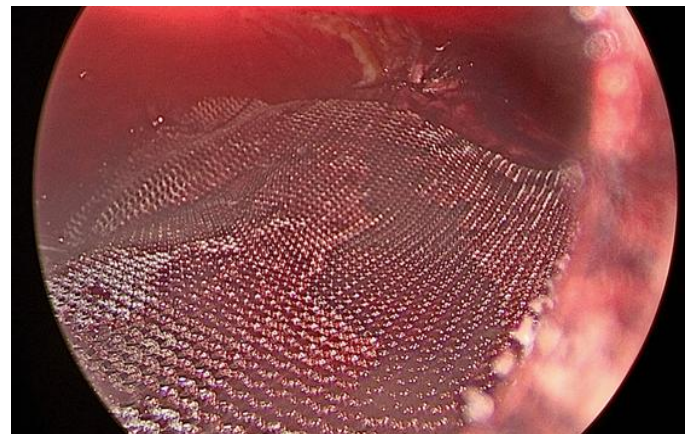


Figure 6

Study Outcomes

- Primary outcome measured was post-operative pain score.
- Duration of hospital stay, return to daily activities and peri-operative morbidity were secondary outcomes.

Results

Demographic Factors	IPOM	eTEP	p - value
Age (Years)			
18 -30	1 (5%)	2 (10%)	0.603 (N.S)
31-45	6 (30%)	8 (40%)	
> 45	13 (65%)	10 (50%)	
Gender			
Male	11 (55%)	13 (65%)	0.159 (N.S)
Female	9 (45%)	7 (35%)	
Diagnosis			
Primary Hernia	19 (95%)	17 (85%)	0.292 (N.S)
Incisional Hernia	1 (5%)	3 (15%)	

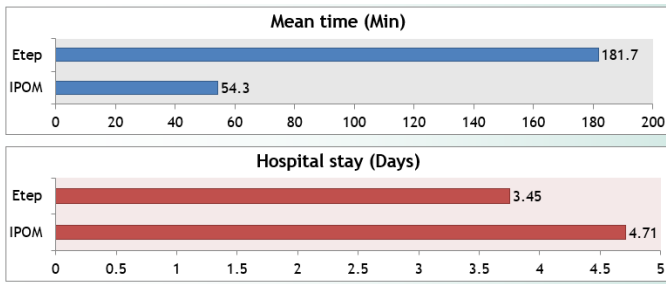
*N.S - Not significant

Table 2

Clinical Factors	IPOM	eTEP	p - value
Time of surgery (Mean ± S.D)			
Mean time (Min)	54.3 ± 0.9	181.7 ± 1.1	0.000* (Sig)
Duration of Hospital stay			
Mean No. of Days	4.71±1.0	3.45±1.86	0.011* (Sig)
Pain scores (Mean VAS)			
POD 1	7.10 ± 0.75	3.62 ± 0.97	0.000* (Sig)
At time of discharge	3.61 ± 1.34	1.52 ± 0.94	0.000* (Sig)
POD 7	2.90 ± 0.54	1.36 ± 1.03	0.000* (Sig)

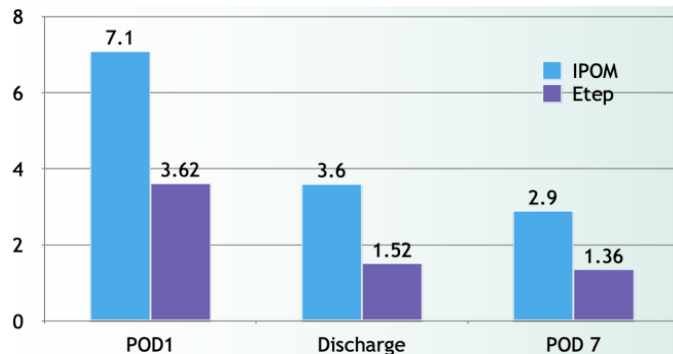
Table 3

*Sig – significant (p<0.05)



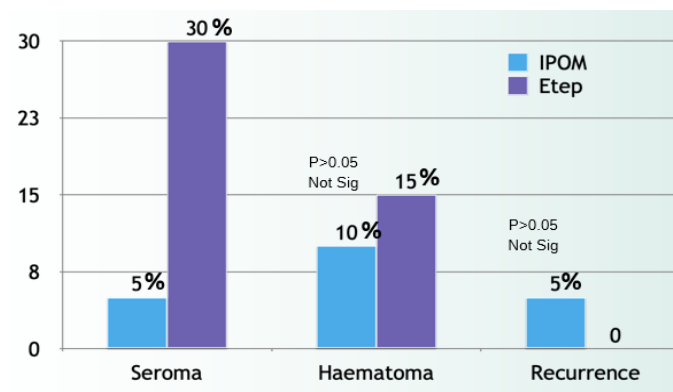
Graph 1

Comparison of Mean Vas Scores



Graph 2

Comparison of Complications



Graph 3

Discussion

Factor (eTEP vs IPOM)	Present study	Belyansky et al ¹	Penchev et al ²	Andreuccetti et al ³
Mean duration of procedure	181.7 / 54.3	218.9	186.0 / 90	-
Mean duration of hospital stay	3.75 / 4.71 days	1.8 days	2.9 / 3.4 days	3.9 days

VAS scores	Present study	Prashanth PS et al ⁴	CCS Scores* (eTEP) Belyansky et al ¹
POD 1	3.62 / 7.1	3.51 / 7.35	Decreased Pain (68%) Improved Movement limitation (87%) post op 6 months
At discharge	1.36 / 2.90	1.2 / 2.8	

CCS Scores - Carolina's Comfort Scale

Conclusion

- The eTEP technique offers superior outcomes and lower peri-operative morbidity when compared to IPOM.
- It enables an earlier return to daily activities.

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