

OUTCOMES OF SMALL UMBILICAL HERNIA REPAIR IN A TERTIARY HOSPITAL

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BACKGROUND

Primary Umbilical Hernias (PUH) are among the most frequently encountered abdominal wall hernias in general surgical practice. The technique of repair for small defects (<2 cm) remains an active area of clinical debate.

In recent years, mesh repair has been increasingly advocated, with proponents citing lower long-term recurrence rates. Published RCT data by Kaufmann et al. (Lancet, 2019) highlight the difference in recurrence between techniques:

Recurrence rate	Suture	Mesh
	12% (17/138)	4% (6/146)
Small defects (1-2 cm)	9%	2%
Larger defects (>2-4 cm)	22%	9%

Commonly used laparoscopic techniques for small PUH include IPOM (Intraperitoneal Onlay Mesh) and IPOM Plus, which incorporates defect closure prior to mesh placement. These techniques need general anesthesia, costly composite meshes that are placed intraperitoneally, and often result in severe early postoperative pain due to fixation of the mesh with tacks or sutures.

Sublay mesh repairs obviate some of these concerns, but are technically difficult.

Many centres, including ours, continue to perform primary suture repair, often under local anesthesia, in view of advantages such as lower direct cost, shorter operative time, absence of implant-related complications, and faster patient recovery.

This study was aimed at investigating the various procedures performed for small PUH and comparing their outcomes.

OBJECTIVES

Primary objective – To study the various techniques of repair of small Primary Umbilical Hernia (PUH) in a tertiary care public hospital

Secondary objectives

- To compare recurrence rates of various techniques of repair of small PUH
 - Recurrence was assessed clinically; ultrasonography was done in case of diagnostic uncertainty in clinical examination
- To compare length of hospital stay (LOS) and satisfaction scores of various techniques

METHODS

Study design

Cross-sectional, observational study

Setting

Tertiary referral hospital
Study conducted as part of postgraduate dissertation

Inclusion Criteria

Patients who had elective repair of small primary umbilical hernia (defect <2 cm), with at least 1 year of follow-up

Exclusion Criteria

Recurrent/ incisional hernias; other concurrent hernias; emergency repair; defect size not documented; lost to follow-up

Primary Outcome

Hernia recurrence — diagnosed clinically or radiologically where clinically uncertain

Secondary Outcomes

Length of hospital stay
Patient Satisfaction Score (using Patient Satisfaction Questionnaire Short Form)

Data Collection

Patients who had hernia repair between January 2021 and March 2024 were contacted telephonically and requested to visit clinic for evaluation and data collection. Data was collected from hospital records. Hernia defect size as per preoperative imaging was noted.

RESULTS

102

Total Patients

33:69

Female:Male

26.2 ± 3.1

BMI (kg/m²)

Mean Follow up

Follow-up: 33.3 ± 11.1 months (Range: 17–61 months)

Mean Defect Size

Mean defect size: 16 ± 4.3 mm

RESULTS

Distribution of Procedures and Comparison of Recurrence: Laparoscopic vs Open Repair

Open repair (n=40)	Laparoscopic repair (n=62)
Suture repair – 39	Suture repair - 11 eTEP-RS – 9 TAPP – 1 IPOM – 14 IPOM Plus – 24 SCOLA – 1 TARM – 2
Rive Stoppa – 1	
Recurrence: 1/40 (2.5%)	Recurrence: 2/62 (3.2%)
p = 0.63 (not significant)	

Comparison of Recurrence: Non-mesh vs Mesh Repair

Non-mesh repair (n=50)	Mesh repair (n=52)
Open suture repair – 39	IPOM – 14 Open Rive Stoppa – 1 eTEP-RS – 9 TAPP – 1 IPOM Plus – 24 SCOLA – 1 TARM – 2
Lap suture repair – 11	
Recurrence: 2/50 (4%)	Recurrence: 1/52 (1.9%)
p = 0.57 (not significant)	

Sub-group analysis – Recurrence: Open Suture Repair vs Lap IPOM/ IPOM Plus

Open Suture Repair (n=39)	IPOM/ IPOM Plus (n=38)
Defect: 13.6 ± 2.4 mm Length of hospital stay: 12 hours Satisfaction: 7.6/10 Done under local anesthesia: 27	Defect: 15.4 ± 3.3 mm Length of hospital stay: 56 hours Satisfaction: 8.1/10
Recurrence: 1/39 (2.6%)	Recurrence: 1/38 (2.6%)
p = 0.99 (not significant)	

DISCUSSION

The difference in recurrence rates between suture repair (4%) and mesh repair (1.9%) did not reach statistical significance (p=0.57), indicating that suture repair remains a clinically acceptable option in carefully selected patients.

Recurrence at least one year after Open Suture Repair (OSR) was comparable to that after various laparoscopic repairs.

Sub-group analysis of the most common procedures performed for small PUH, i.e. OSR and IPOM/ IPOM Plus, showed similar recurrence at a minimum follow up of 1 year, with significant shorter hospital stay in patients who had OSR. Satisfaction scores were comparable.

Majority of OSR procedures were done under local anesthesia by residents, indicating their simplicity and easy replicability.

STRENGTHS

Procedures were performed by more than 10 consultants and 20 residents from different units using various techniques, showing the real-world practices in management of small PUH

LIMITATIONS

- Retrospective cross-sectional design
- Single-centre experience, limiting generalizability

CONCLUSION

- No significant difference in recurrence: suture repair 4% vs mesh repair 1.9% (p=0.57)
- Recurrence after Open Suture Repair and Laparoscopic IPOM/ IPOM Plus are comparable, with shorter hospital stay after suture repair.
- Suture repair is a valid option for selected small (<2 cm) primary umbilical hernias.
- More extensive prospective research is required to develop conclusive evidence-based recommendations.

REFERENCES

- Marshall GN, Hays RD. The Patient Satisfaction Questionnaire Short Form (PSQ-18). Santa Monica, CA: RAND Corporation; 1994. p. 7865.
- Kaufmann R, Halm JA et al. Mesh versus suture repair of umbilical hernia in adults: a randomised, double-blind, controlled, multicentre trial. Lancet. 2018 Mar 3;391(10123):860-869