

Preliminary Evaluation of the Transinguinal Preperitoneal (TIPP) Technique for the Elective Treatment of Inguinoscrotal Hernia

Introduction

The transinguinal preperitoneal (TIPP) technique for inguinoscrotal hernia repair involves an anterior approach, opening the external oblique aponeurosis (1) and dissecting the spermatic cord to reduce the hernia sac (2). The preperitoneal space is then bluntly dissected (3) for mesh placement (4). Finally, the transversalis fascia (5) and the external oblique aponeurosis (6) are closed.

The aim was to compare TIPP with Lichtenstein and the open preperitoneal technique, evaluating 30-day complications and long-term outcomes.

Material and Methods

Retrospective case-control study was conducted in two tertiary hospitals between January 2020 and January 2024.

TIPP cases from 2023 were matched 1:6 with controls

treated using Lichtenstein and open preperitoneal methods.

Patients undergoing emergency surgery, alternative techniques, or with incomplete clinical data were excluded.

Results

After matching, 86 patients were analyzed:

8 with TIPP, 41 with the Lichtenstein technique, and

37 with the open preperitoneal technique.

TIPP patients were discretely older and had a higher comorbidity (75%) compared to other groups, although these differences were not statistically significant.

No differences were observed in the characteristics of the hernia.

All surgeries were performed by abdominal wall surgeons. The surgery duration for TIPP was similar to Lichtenstein but longer than the open preperitoneal technique (72 vs. 70 vs. 55 min; $p=0.004$).

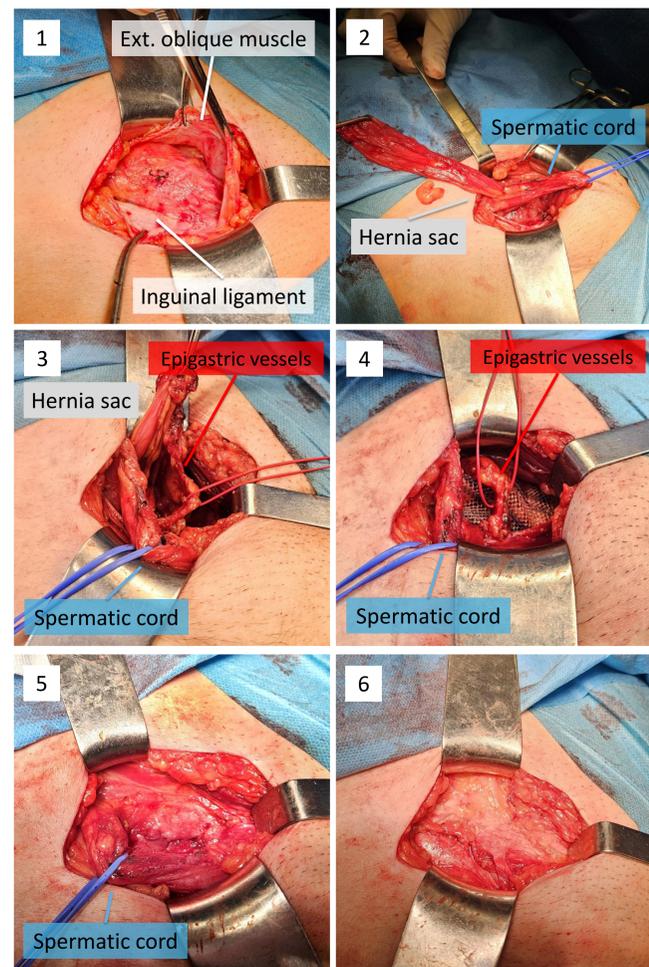
The 30-day complication rate for TIPP was dominated by hematomas (50%), whereas seromas prevailed in the other groups (17.1% in Lichtenstein and 24.3% in open preperitoneal).

Chronic pain rates were low across all techniques. Recurrence rates were similarly minimal, with 0% in the TIPP group, 4.9% (2/41) in the Lichtenstein group, and 2.7% (1/37) in the preperitoneal group ($p=0.744$).

Conclusion

TIPP is a viable and safe alternative to other open techniques for elective inguinoscrotal hernia repair. However, further research is needed to establish its definitive role for the treatment of this condition.

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Surgical steps for the TIPP technique

	TIPP n: 8	Lichtenstein n: 41	Open Preperitoneal n: 37	p-value
	n (%) median (IQR)	n (%) median (IQR)	n (%) median (IQR)	
Sex: Male	8 (100 %)	41 (100 %)	37 (100 %)	1.000
Age (years)	78.8 (59.3 – 87.7)	68,0 (50.9 – 80.73)	73.7 (62.8 – 80.9)	0.157
BMI (kg/m²)	25.6 (23.9 – 28.3)	26 (24.3 – 27.7)	26.8 (24.1 – 28.9)	0.678
Comorbidity				
DM	6 (75 %)	25 (61 %)	23 (62.2 %)	0.750
Resp. disease	1 (12.5 %)	3 (7.3 %)	8 (21.6 %)	0.189
Immunosuppression	3 (37.5 %)	8 (19.5 %)	8 (21.6 %)	0.531
	0	0	0	1.000
Active smoking	1 (12.5 %)	8 (19.5 %)	7 (18.9 %)	0.204
ASA				
I – II	4 (50 %)	29 (70.7 %)	24 (64.8 %)	0.633
III - IV	4 (50 %)	12 (29.3 %)	13 (35.2 %)	
Irreducible hernia	2 (25 %)	11 (26.8 %)	11 (29.7 %)	0.943
Recurrent hernia	0	3 (7.3 %)	4 (10.8 %)	0.547
Bilateral hernia	4 (50 %)	12 (29.3 %)	9 (24.3 %)	0.349

	TIPP n: 8	Lichtenstein n: 41	Open Preperitoneal n: 37	p-value
	n (%) median (IQR)	n (%) median (IQR)	n (%) median (IQR)	
Duration (min)	72 (61 – 90)	70 (60 – 90)	55 (45 – 67)	0.004
Hospital stay (days)	0.5 (0 – 5)	1 (0 – 1)	0 (0 – 1)	0.331
Day-case surgery	5 (62.5 %)	19 (46.3 %)	21 (56.8 %)	0.546
Complications	5 (62.5 %)	17 (41.5 %)	20 (54.1 %)	0.388
SSO	4 (50 %)	12 (29.3 %)	14 (37.8 %)	0.469
Seroma	1 (12.5 %)	7 (17.1 %)	9 (24.3 %)	0.625
Hematoma	4 (50 %)	6 (14.6 %)	8 (21.6 %)	0.079
SSI	0	0	0	1.000
Funiculitis	1 (12.5 %)	1 (2.4 %)	6 (16.2 %)	0.106
Clavien-Dindo				
I	5 (62.5 %)	13 (31.7 %)	16 (43.2 %)	
II	0	3 (7.3 %)	5 (13.5 %)	0.453
III	0	1 (2.4 %)	0	
Follow-up (months)	12.3 (7.9 – 14.4)	11.7 (5.9 – 14.7)	16.2 (12.3 – 20.9)	0.005
Recurrence	0	2 (4.9 %)	1 (2.7 %)	0.744
Chronic pain	1 (12.5 %)	2 (4.9 %)	0	0.174