Optimal Technique for Direct Defect Closure in TEP/TAPP+ Laparoscopic Inguinal Hernia Repair

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INTRODUCTION

- We previously published the "TEP/TAPP+" techniques in 2019 describing closure of the direct defect using non-absorbable barbed sutures during laparoscopic inguinal hernia mesh repair and demonstrated a reduction in post-operative seroma and recurrence rates.

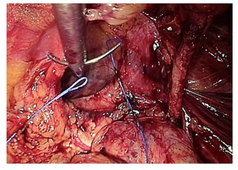


Fig 1. Right inguinal hernia direct defect

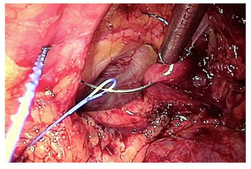


Fig 2. Closure of direct defect with 15cm non absorbable barbed suture

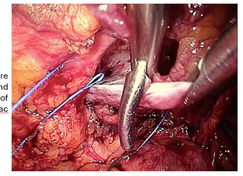


Fig 3. Direct closure involving inversion and incorporation of pseudosac

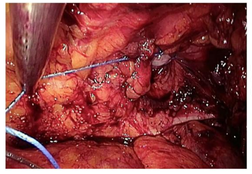
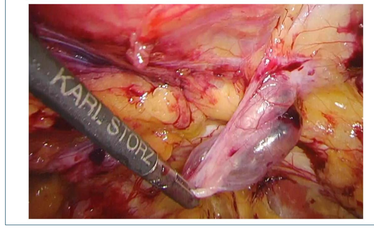
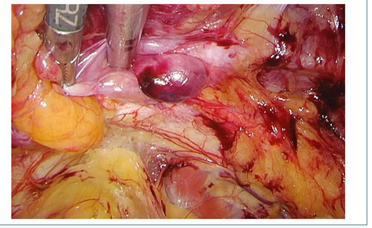


Fig 4. Completion of direct defect closure prior to mesh insertion

- We now propose an updated version of the technique using absorbable tackers to the tack the pseudo-sac to Cooper's ligament to obliterate the direct defect.





AIM

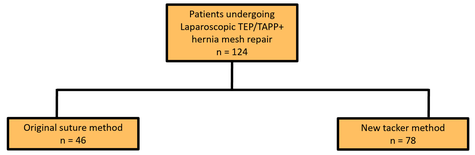
The aim of this study is to compare post-operative outcomes of the updated tacker technique to the original suture technique.

METHODS

- Retrospective study
- March 2022 – May 2023
- All patients that underwent laparoscopic TEP/TAPP+ inguinal hernia mesh repair at two major surgical centres in Singapore
- Data points : pre-operative examination findings, intra-operative findings, type of repair performed, risk factors for recurrence and post-operative outcomes

RESULTS

- A total of 124 herniae were repaired using the TEP/TAPP+ technique during this period, of which 46 were performed using the original suture method, while the remaining 78 were performed using the updated tacker method.



- Patient demographics in both groups were similar, with no statistical difference in age (64.4 vs 64.9, p=0.79), BMI (23.4 vs 23.2, p=0.76), American Society of Anaesthesiology scores (p=0.18), presence of inguinoscrotal or irreducible hernia (6.5% vs 6.4%, p=0.74).

Table 1 - Demographics	Suture N = 46	Tack N = 78	p-value
Age (mean, SD)	64.4 (12.2)	64.9 (8.81)	0.79
Gender			-
Male	46	78	
Female	0	0	
BMI (mean, SD)	23.4 (3.41)	23.2 (3.52)	0.76
ASA			
ASA 1	5	16	0.18
ASA 2	40	57	
ASA 3	1	5	
Comorbidities			
DM	5	11	0.60
BPH	8	17	0.55
Constipation	0	2	-
Lung pathology	0	2	-
Presence of inguinoscrotal hernia or irreducible hernia	3	4	0.74

RESULTS

- There was no difference in length of hospital stay as most patients were discharged within one day of the surgery (95.7% vs 91.0%, p=0.34). the updated tacker group was followed up for a shorted period (72 days vs 127 days, p=0.0008) and had a smaller incidence of post operative seroma rate (3.8% vs 19.5%, p=0.0042).
- One patient in the updated tacker group experienced recurrence while one patient in the original suture group experienced chronic groin pain.

	Suture N = 46	Tack N = 78	p-value
Length of stay (days)			
≤1	44	71	.34
≥2	2	7	
Length of follow up (days) (mean, SD)	127 (101)	72 (77)	<0.05
Post-operative complications			
Seroma	9	3	<0.05
Recurrence	0	1	-
Chronic pain	1	0	-

CONCLUSION

- In this TEP/TAPP+ study, tacking was shown to be as effective as suturing.
- This reduces the technical difficulty and would allow more surgeons to perform the TEP/TAPP+ repair with greater ease.
- Tacking may potentially reduce seroma rate further than suturing the direct defect.
- Larger scale prospective studies and randomised controlled trials will have to be performed to validate our study.