OUTCOMES FOLLOWING ROBOTIC AND OPEN TRANSVERSUS ABDOMINAL MYOFASCIAL RELEASE FOR COMPLEX ABDOMINAL WALL HERNIAS

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INTRODUCTION

Transversus Abdominis Release (TAR) procedures have become a viable surgical approach for abdominal wall reconstruction. The robotic platform is also increasingly utilized for such cases. This study aims to present the experience of a single surgeon comparing open and robotic abdominal wall reconstruction with TAR.

METHODS

Consecutive hernia cases were captured in a prospective database. Cases performed between 2021 and 2023 were retrospectively analyzed. Data points included demographics, hernia repair history, operative information, and 30-day outcomes. TAR procedures and surgical approaches were identified. Continuous variables are compared using Kruskal Wallis tests, while categorical variables are compared using chi-squared or Fisher exact tests.

RESULTS

Eighty-three cases were analyzed, including 61% (n=51) robotic TAR (rTAR). The mean age of patients in the robotic cohort was 59.63±12.80 years and 65.47±13.28 years in the open cohort (p=0.027). Those receiving an open TAR (oTAR) had higher ASA class 3 (88% vs. 55%, p=0.019). History of previous abdominal operations was more frequently observed in the robotic cohort (36% vs. 13%, p=0.03), while the open cohort exhibited a higher prevalence of prior incisional hernias repair (74% vs. 46%, p=0.013). Paravertebral blocks were more commonly used in rTAR (82% vs 23%) and an epidural in oTAR (77% vs 0%) (<0.001). Hernia diameter 4-10cm was more common in rTAR (67% vs. 22%, p<0.001), while diameter >10 was more common in oTAR (75% vs. 35%, p<0.001). Wound class 2 or 3 were more common in oTAR (45% vs. 27%, p 0.001). Mean operation length was longer with rTAR (5.67±1.27 vs 4.55±1.55, p<0.001). Length of stay was shorter with rTAR (2.24±1.08 vs. 5.27±3.53, p <0.001). There was no recurrence. Readmission (13% vs. 2%, p=0.045), limited activity level (37% vs 14%, p 0.019), and deep SSI (10% vs. 3%, p 0.023) were more common with oTAR. Other complications were similar between rTAR and oTAR.

Table 1. Patient outcomes

	Surgical Approach				p-value
	Open (n=32)		Robotic (n=51)		
	Mean	**SD**	**Mean**	**SD**	
Operation length	5.47	1.54	6.51	1.26	**<0.001**
Pain at discharge	2.23	1.68	3.69	2.25	**0.004**
Pain at interval follow-up	1.48	1.38	0.98	1.42	0.065
Hospital LOS (days)	5.27	3.53	2.24	1.08	**<0.001**
Follow-up duration (months)	28.6	17.13	29.78	15.15	0.168
	N	**Percent**	**N**	**Percent**	
Intraoperative complication	2	6.25%	3	5.9%	0.945
Readmission	4	12.5%	1	2%	**0.045**
Reoperation	1	3.1%	0	0%	0.194
Reintervention	2	6.25%	1	2%	0.242
Seroma	1	3.1%	5	9.8%	0.397
Deep SSI	2	6.25%	0	0%	0.145
ED admission	1	3.1%	1	2%	1.00
Skin dehiscence	1	3.1%	1	2%	1.00
Hernia recurrence	0	0%	0	0%	

CONCLUSIONS

- ❑ rTAR is safe and effective for complex abdominal wall hernias.
- ❑ Associated with lower readmission and less pain at interval follow-up
- ❑ Cost associated with longer operative time needs to be assessed in assessed in context of cost mitigation associated with lower adverse outcomes such as SSI and hospital readmission.

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