

Background

The application of novel techniques such as enhanced-view totally extraperitoneal (eTEP) access with laparoscopic and robotic Rives-Stoppa and transversus abdominis release repairs (TAR) have revolutionized the care of patients with complex abdominal wall hernia disease. A potential complication of this approach is abdominal wall fluid collection and some studies have shown that the use of closed suction drains may reduce fluid collection rates. The purpose of this study is to determine the efficacy of drains in reducing abdominal wall fluid collection following minimally invasive abdominal wall reconstruction (MIS AWR).

Study Design

A retrospective review of a prospectively maintained database was conducted of all patients who underwent MIS AWR between September 2015 and April 2019. Between September 2015 and October 2018, 19 Fr round drain placement was selective after MIS AWR. From October 2018 to April 2019, all MIS AWR patients received drains. Patients were sub-divided based on the presence of drain after MIS AWR during the two periods:

Group I (No Drain, selective period)

Group II (Drain, selective period)

Group III (Prophylactic drain)

All drains were removed within 7 days post surgery.

Table 1: Demographics	Selective Group n = 438		Prophylactic n = 97	P value		
Variable	No Drain n = 312	Drain n = 126	Drain	Analysis 1	Analysis 2	Analysis 3
	Group I	Group II	Group III	II vs. III	I vs. II	I vs. III
Age	54.0 ± 14.4	59.1 ± 11.8	58.1 ± 10.9	0.521	0.000	0.009
BMI	32.0 ± 6.7	34.3 ± 7.2	33.7 ± 7.6	0.555	0.002	0.033
Sex				0.197	0.037	0.692
Female	144 (46.2%)	72 (57.1%)	47 (48.5%)			
Male	168 (53.9%)	54 (42.9%)	50 (51.6%)			
ASA Score				0.078	<.0001	0.010
1	14 (4.5%)	1 (0.8%)	1 (1%)			
2	191 (61.2%)	49 (38.9%)	50 (51.6%)			
3	104 (33.3%)	75 (59.5%)	44 (45.4%)			
4	3 (1%)	1 (0.8%)	2 (2.1%)			
Hernia Characteristics						
Recurrent Hernia	61 (19.6%)	52 (41.3%)	29 (29.9%)	0.080	<.0001	0.032
Diastasis Recti	198 (63.5%)	99 (78.6%)	97 (100%)	<.0001	0.0002	<.0001
Multiple Defects	84 (26.9%)	23 (18.3%)	20 (20.6%)	0.657	0.056	0.213

Table 2: Intraoperative Outcomes	Selective Group n = 438		Prophylactic Drain n = 97	P value		
Variable	No Drain n = 312	Drain n = 126	Drain	Analysis 1	Analysis 2	Analysis 3
	Group I	Group II	Group III	II vs. III	I vs. II	I vs. III
Defect size	6.8 ± 4.1	9.8 ± 4.7	9.0 ± 3.6	0.281	<.0001	0.000
Mesh area	536.5 ± 285.7	828.5 ± 276.0	806.0 ± 271.7	0.550	<.0001	<.0001
Operative time	174.6 ± 79.2	225.0 ± 86.0	182.8 ± 69.9	<.0001	<.0001	0.361
Procedure				0.203	<.0001	<.0001
RS	176 (56.4%)	44 (34.9%)	42 (43.3%)			
TAR	88 (28.2%)	82 (65.1%)	55 (56.7%)			
Other	48 (15.4%)	0 (0%)	0 (0%)			
Lap Approach	144 (46.2%)	43 (34.1%)	34 (35.1%)	0.886	0.021	0.054

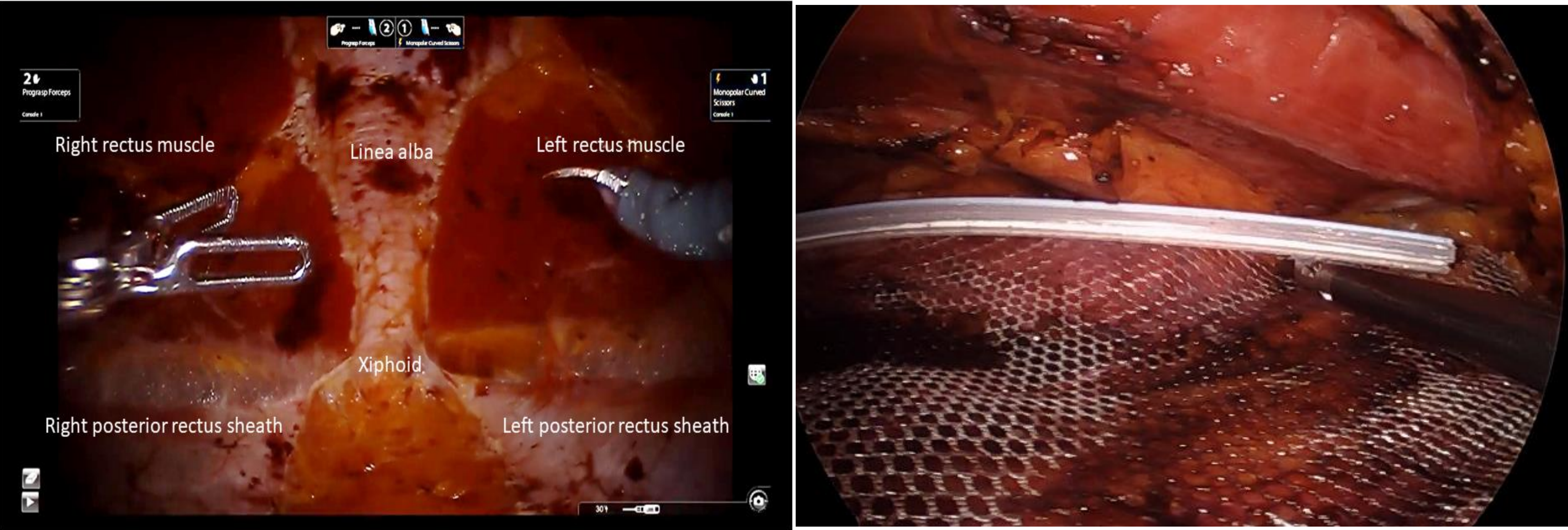
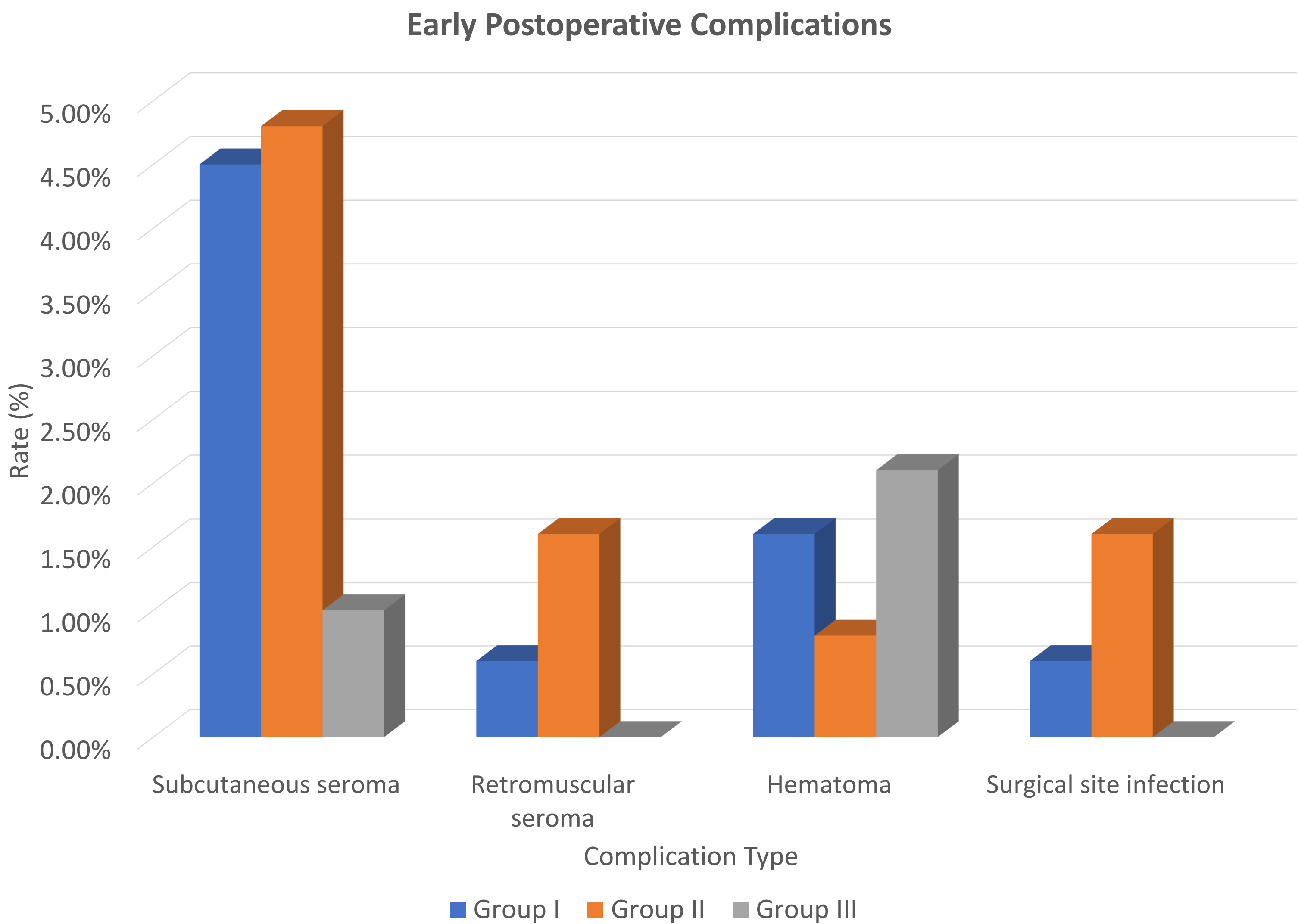


FIGURE 1. (left) Developing the retrorectus space (right) Drain placement in the retrorectus space over implanted mesh



Conclusion

Based on our preliminary findings, short-term prophylactic retromuscular drain placement after MIS AWR is an efficacious strategy to reduce abdominal wall fluid collections, especially deep seromas, without an increase in the risk of SSI. Prospective studies are needed to investigate strategies to mitigate retromuscular fluid collections after MIS AWR.