

Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Demographics and Patient Characteristics

	Laparoscopic N=54	Robotic N=48	P value
Age at the assessment date, mean (SD)	57.2 (13.3)	56.1 (14.1)	0.678
Race			0.875
Caucasian	45	40	
Hispanic	1	2	
African American	6	5	
Asian/Pacific Islander	1	0	
Other	0	1	
Sex			0.744
Male	48	44	
Female	6	4	
BMI, mean (SD)	26.9 (4.42)	24.9 (3.24)	0.014
Hypertension requiring medication, N (%)	17 (31.5)	18 (37.5)	0.667
Congestive heart failure, N (%)	2 (1.96)	1 (2.08)	1.000
Coronary artery disease, N (%)	6 (11.3)	6 (12.5)	1.000
Chronic obstructive pulmonary disease, N (%)	1 (1.85)	0 (0.00)	1.000
Diabetes mellitus, N (%)	4 (7.41)	2 (4.17)	0.681
Current Smoker (active within 1 month of surgery), N (%)	6 (11.3)	3 (6.25)	0.493
Chronic Immunosuppression, N (%)	3 (5.56)	0 (0.00)	0.246
Prior DVT, N (%)	0 (0.00)	0 (0.00)	
Prior PE, N (%)	0 (0.00)	0 (0.00)	
Recurrent Inguinal Hernia, N (%)	3 (5.56)	5 (10.6)	0.467
History of BPH or currently on BPH medications, N (%)	6 (11.1)	5 (10.4)	1.000

eTable 2. Operative Details

	Laparoscopic N=54	Robotic N=48	P value
Antibiotics Given According to SCIP Protocol, N (%)	54 (100)	48 (100)	
Type of Robot Used			
Si	N/A	32	
Xi	N/A	16	
Position of Robot Docking			
Lithotomy		2	
Side/Parallel		46	
Size of Port # 1 Used (Umbilical), N (%)			<0.00 1
5	8 (14.8)	0 (0.00)	
8	0 (0.00)	14 (29.2)	
10	3 (5.56)	0 (0.00)	
11	3 (5.56)	6 (12.5)	
12	40 (74.1)	28 (58.3)	
Size of Port #2 Used (Lateral Right), N (%)			<0.00 1
5	49 (92.5)	1 (2.08)	
8	0 (0.00)	46 (95.8)	
10	1 (1.89)	0 (0.00)	
12	3 (5.66)	1 (2.08)	
Size of Port #3 Used (Lateral Left), N (%)			<0.00 1
5	51 (94.3)	2 (4.17)	
8	0 (0.00)	45 (93.8)	
9	0 (0.00)	1 (2.08)	
10	1 (1.89)	0 (0.00)	
12	2 (3.77)	0 (0.00)	
Assist Port Used	0 (0.00)	3 (6.67)	0.103
Time from skin incision to closure, Median [25 th ; 75 th]	40.5 [29.2;63.8]	75.5 [59.0;93.8]	<0.00 1
Docking of Robot, Median [25 th ; 75 th]		5 [3.88;10.2]	
Time for Dissection of the Hernia, Median [25 th ; 75 th]	13.0 [7.00;23.0]	18.0 [12.0; 27.0]	0.012
Time for Intraperitoneal Mesh Placement, Median [25 th ; 75 th]	3.00 [2.00;4.00]	3.00 [2.00;5.00]	0.279
Time for Mesh Fixation, Median [25 th ; 75 th]	1.00 [1.00;3.00]	6.88 [5.00;9.00]	<0.00 1

Time for Peritoneal Closure, Median [25th; 75th]	2.00 [1.00;3.00]	7.00 [5.00;9.00]	<0.001
Amount of IV Fluids Received, Median [25th; 75th]	600 [500;800]	800 [700;1050]	<0.001
Side of Inguinal Hernia, N (%)			0.647
Right	28 (51.9)	28 (58.3)	
Left	26 (48.1)	20 (41.7)	
Type of Hernia, N (%)			0.633
Direct	18 (33.3)	12 (25.0)	
Indirect	31 (57.4)	31 (64.6)	
Both	5 (9.26)	5 (10.4)	
Hernia size (cm), Median [25th; 75th]	3.00 [2.00;3.00]	3.00 [2.00;3.00]	0.975
Length of Mesh Used (cm), (Cranial – Caudal), Median [25th; 75th]	12.0 [12.0;15.0]	12.0 [12.0;15.0]	0.450
Width of Mesh Used (cm), (Medial - Lateral), Median [25th; 75th]	15.0 [13.0; 15.0]	15.0 [12.0;15.0]	0.611
Mesh fixation			
Number of Tacks Used, Median [25th; 75th]	4.00 [4.00;5.00]	6.00* [6.00;6.00]	
Peritoneal closure			
Type of Suture Material Used, N (%)			1.000
Absorbable	4 (100)†	37 (86)	
Permanent	0 (0.00)	6 (14.0)	
Number of tacks used for peritoneal closure, Median [25th; 75th]	8.00 [6.00; 10.00]	6.00 [6.00;6.00] *	

*Tacks in the robotic group represent the patient who was converted to laparoscopic approach and whose data were analyzed using intention to treat principles

†Suture material in the laparoscopic group was utilized to close rents in the peritoneum distinct from the peritoneal flap

eTable 3. Unanticipated admissions

	Laparoscopic N=54	Robotic N=48	P value
Length of Hospital Stay (hours), median [IQR]	5.11 [4.00;7.00]	5.75 [5.00;7.00]	0.424
Unanticipated admission, N (%)	2 (3.8)	4 (8.3)	0.420
Reason for admission, N (%)			1.000
Pain	0	1 (33.3)	
Urinary retention	1 (50.0)	0	
Other	1 (50.0)	2(66.7)	
Intervention for admission			1.000
Foley catheter placement	1 (50.0)	0	
IV pain medication	0	1 (33.3)	
Other	1 (50.0)	2 (66.7)	

eTable 4. Short Form - 36

Time Point	Preoperative			1 week			1 month		
	Lap N=54	Rob N=47	P value	Lap N=54	Rob N=47	P value	Lap N=54	Rob N=47	P value
Physical Functioning	80.6 (19.8)	83.7 (16.7)	0.391	-11.24 (22.3)	-11.68 (24.1)	0.925	1.07 (17.2)	1.06 (17.4)	0.998
Role Limitations due to physical health	66.7 (42.3)	76.1 (39.7)	0.253	-30.56 (49.2)	-34.57 (47.4)	0.677	-8.02 (48.3)	-20.74 (51.7)	0.207
Role limitation due to emotional problems	86.4 (31.4)	89.3 (25.2)	0.607	-6.78 (39.6)	-11.34 (37.0)	0.551	1.22 (39.9)	-5.62 (31.3)	0.338
Energy/fatigue	64.5 (19.7)	68.2 (17.1)	0.321	-3.24 (19.0)	-3.89 (17.1)	0.856	0.56 (15.3)	0.96 (14.2)	0.892
Emotional Well-being	79.9 (14.2)	82.1 (12.1)	0.387	1.44 (9.23)	-0.77 (9.27)	0.234	3.85 (14.0)	2.64 (11.5)	0.633
Social Functioning	91.8(13.7)	92.4 (12.6)	0.817	-8.28 (22.3)	-7.40 (17.2)	0.825	-4.65 (22.1)	-0.74 (11.1)	0.256
Pain	65.0 (27.5)	73.3 (24.5)	0.111	-12.59 (25.9)	-16.51 (24.8)	0.440	6.06 (28.5)	-2.85 (28.1)	0.118
General Health	79.3 (14.9)	80.7 (13.5)	0.606	-1.98 (13.4)	-1.72 (9.57)	0.911	-2.31 (12.4)	1.55 (8.43)	0.067
Physical Component Summary	48.1 (9.38)	50.4 (8.66)	0.204	-6.52 (8.50)	-6.95 (8.64)	0.803	-0.59 (8.91)	-1.98 (8.90)	0.434
Mental Component Summary	54.3 (7.83)	54.8 (6.77)	0.734	0.80 (7.91)	0.00 (7.38)	0.598	0.65 (8.29)	0.71 (5.84)	0.965

eTable 5. Adverse Events

	Laparoscopic N=54	Robotic N=48	P value
Adverse Events, N (%)	5 (9.3)	8 (16.7)	0.374
Superficial SSI, N (%)	1 (1.85)	0 (0.00)	>0.99
Purulent Drainage From Wound, N (%)	1 (1.85)	0 (0.00)	>0.99
Seroma, N (%)	3 (5.6)	6 (12.5)	0.299
Hematoma, N (%)	0 (0.00)	1 (2.08)	0.471
Required Intervention, N (%)	1 (1.85)	0 (0.00)	0.400
Oral Antibiotics, N (%)	1 (1.85)	0 (0.00)	>0.99
Urinary Retention	1 (1.85)	1 (2.08)	>0.99

eTable 6. Cost

	Laparoscopic N=54	Robotic N=48	P value
Total Cost, Median [25th; 75th]	1421 [1196;1930]	3258 [2568;4118]	<0.001
OR Cost, Median [25th; 75th]	879 [714;1052]	1401 [1234;1933]	<0.001
Disposable/Reusable Median Cost [25th; 75th]	578 [377;942]	1876 [1204;2364]	<0.001
Total Cost, Mean	1854 (1838)	3732 (2907)	<0.001
OR Cost, Mean	1368 (1674)	2141 (2099)	0.044
Disposable/Reusable Cost, Mean	623 (434)	1784 (1149)	<0.001
Group, N%			0.625
Cleveland Clinic	21 (38.9%)	14 (29.2%)	
USC Greenville	12 (22.2%)	15 (31.2%)	
MCW	5 (9.26%)	5 (10.4%)	
New Hanover	7 (13.0%)	8 (16.7%)	
Mt. Sinai	3 (5.56%)	4 (*.33%)	
Washington University in St. Louis	6 (11.1%)	2 (4.17%)	