

Quality Outcome Measures of Robotic Department of Surgery in Patients with Endometrial Cancer

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Quality Outcome Measures of Robotic Surgery in Patients with Endometrial Cancer

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Objectives:

The aim of this study was to identify quality indicators following robotic surgery in patients with endometrial cancer.

Methods:

Patients diagnosed with endometrial cancer scheduled for a robotic-assisted hysterectomy from 6/2008-6/2010 were compared to endometrial cancer patients who had laparoscopic-assisted hysterectomy from 9/2005-6/2010. Demographic data included age, BMI, comorbidities and stage. Outcome measures reviewed were lymph node retrieval, LOS, EBL, operative times, transfusion rates and complications. SPSS was used to perform Student's t-tests and Pearson's chi square tests.



Table 1. Patient Demographics

Secondary Outcomes	Robotic (n=106)	Laparoscopic (n=122)	P value
Age			
Mean	61.7	63.6	0.216
SD	11.913	11.404	
BMI (kg/m²)			
Mean	35.39	33.59	0.152
SD	9.45	8.27	
Clinical Stage			
IA	38	31	
IB	36	61	
IC	11	17	
IIA	4	2	
IIB	7	4	
IIIA/IIIB/IIIC	10	6	
IVA/IVB	0	1	
Total Nodes			
n	33	52	
Mean	18.8	16.54	0.256
SD	16.68	7.29	
Total Pelvic Nodes			
n	46	59	
Mean	14	12.88	0.439
SD	7.31	7.32	
Total Periaortic Nodes			
n	31	50	
Mean	5.13	5.52	0.680
SD	4.23	3.94	
Comorbidities			
Hypertension	33	61	
Diabetes	12	20	
Asthma	1	3	

Table 2. Operative Outcomes

	Robotic (n=106)	Laparoscopic (n=122)	P value
EBL			
Mean	129.9	217.7	0.002
SD	198.2	226.1	
LOS (min)			
Mean	2360.88	3233.96	0.152
SD	1364.81	1972.05	
LOS (d)			
Mean	1.31	1.98	0.00003
SD	0.94	1.41	
Total Incision Time (min)			
Mean	180.59	194	0.127
SD	69.44	61.45	
Total OR Room Rime (min)			
Mean	150.13	261.75	0.207
SD	73.95	63.03	
Number of Transfusions			
Transfusion Rate	0.94%	8.20%	

Table 3. Complications

COMPLICATIONS	TRH (n=106)	Incidence Rate	TLH (n=122)	Incidence Rate
Major Intraoperative Complications				
Caval injury	1	0.94%		
Bowel injury	1	0.94%		
Bladder injury	1	0.94%		
Uterine perforation	1	0.94%	1	0.82%
Major Intraoperative Complication Rate	3.77%		1.64%	
Conversions				
Laparoscopic to laparotomy			8	
Pre-docking conversion to laparotomy	2			
Post-docking conversion	3			
Total Conversion Rate	4.72%		4.72%	
Readmission <30 days				
	5	4.72%	11	9.02%
Major Postoperative Complications				
Death < 30 days of surgery	1	0.94%		
Atrial fibrillation			1	0.82%
Stroke				
MI			2	1.64%
Port site hernia			3	2.46%
Umbilical hernia				
Readmission for ileus			2	1.64%
Small bowel resection due to port site hernia			2	1.64%
VTE - 1 DVT, 2 DVT with PE	3	2.83%		
Respiratory failure/reintubation	1	0.94%		
Pulmonary edema				
Cholecystitis				
Femoral nerve palsy				
Lymph edema				
Wound cellulitis	1	0.94%	1	0.82%
UTI	1	0.94%	4	3.28%
Wound infection	2	1.89%	3	2.46%
Pelvic hematoma			1	0.82%
Vaginal cuff hematoma				
Vaginal cuff dehiscence	1	0.94%		
Vaginal seroma				
Vaginal cuff cellulitis			1	0.82%
Vaginal cuff abscess			1	0.82%
Vaginal fistulae			1	0.82%
Vesicovaginal fistula			1	0.82%
Pelvic abscess	1	0.94%		
Sepsis	1	0.94%		
Pneumonia	1	0.94%		
Total Major Complications:				
Intraoperative	4		2	
Postoperative	13		26	
Total Number of Complications	17		28	
Total Patient Complication Rate				
	10.383%		19.67%	

Results:

228 patients (106 robotic, 122 laparoscopic) were analyzed. There were no significant difference between the robotic and laparoscopic cohorts with respect to age, BMI, stage, comorbidities or total lymph node counts (16 vs 18). Five robotic cases (4.7%) and 8 laparoscopic cases (6.6%) had to be converted to laparotomies (P=.55). One robotic case (.94%) and 10 laparoscopic cases (8.20%) received transfusions (P=.01). Median operative time was 186 min for robotics and 183 min for laparoscopies (P=.13). Median EBL was 50mL for the robotic group and 150mL for the laparoscopic group (P<.01). Median LOS was for robotics and laparoscopic cohorts were 1 and 2 days, respectively (P<.01). Eleven robotic patients experienced a perioperative complication (10.4%) compared to 24 laparoscopic patients (19.7%) (P=.05).

Conclusion:

Patients who have robotic surgery experience less blood loss, shorter length of stays, fewer transfusions and fewer complications compared to laparoscopic surgery. Robotic surgery improves surgical outcome related to quality.