Benchmarking Quality Metrics for Endometrial Cancer Patients: Robotics vs. Laparoscopy

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Objective:

The aim of this study was to identify quality indicators following robotic surgery in patients with endometrial cancer. Primary outcome measures were length of stay (LOS), estimated blood loss (EBL), and operative times (OR times). Secondary outcome measures were transfusion rates and perioperative complication rates.

Methods:

- From 6/2008 to 6/2011, all consecutive patients diagnosed with endometrial cancer who were scheduled for a robotic-assisted hysterectomy by the gynecologic oncology service were prospectively captured. They were compared to a retrospective cohort of endometrial cancer patients who had a laparoscopic-assisted hysterectomy from 9/2005 to 6/2011.
- Demographic data included age, BMI, and cancer stage.
- Outcome measures reviewed were lymph node retrieval, LOS, EBL, OR times, transfusion rates and complications.
- SPSS was used to perform Student's t-tests and Pearson's chi-squared tests.
- This study was IRB-approved.

Results:

Three hundred forty-one patients (207 robotic and 134 laparoscopic) were analyzed. There were no significant differences between the two groups in age, BMI, or cancer stage. (Table 1) For the robotic cohort, the median pelvic, periaortic and total nodal counts were 12 (range: 1-34), 4 (range: 1-19), and 14 (range: 1-43). For the laparoscopic cohort, they were 12.5 (range: 2-22), 4 (range: 1-17), and 16 (range: 2-35), respectively. Five robotic cases (2.4%) and 10

laparoscopic cases (7.5%) were converted to laparotomies (P=.03). One robotic case (.48%) and 12 laparoscopic cases (8.96%) received transfusions (P<.0001). Median operative time (skin incision to closure) was 161 min (range: 62-366) for robotics and 180 min (range: 92-448) for laparoscopies (P=.01). Median OR room time was 229 min (range: 118-466) and 253 min (range: 154-534), respectively (P=.03). Median EBL was 50mL (range: 10-1200) for the robotic group and 150mL (range: 10-1600) for the laparoscopic group (P<.001). Median LOS was 1 day (range: 1-12) for robotics and 1.5 days (range: 1-17) for laparoscopies (P=.002). Nineteen robotics patients experienced a perioperative complication (9.2%) compared to 25 laparoscopic patients (18.7%) (P=.01). (Table 2)

Conclusion:

Patients with endometrial cancer who have robotic surgery experience shorter operative times, less blood loss, shorter length of stays, fewer transfusions and fewer complications compared to laparoscopic surgery. These findings suggest surgical quality outcomes may be improved for patients who have robotic surgery for endometrial cancer.

Table 1. Patient Demographics

	Robotic (n=207)	Laparoscopic (n=134)	p value
AGE (years)			
Mean ± SD	62.4 ± 11.9	63.7 ± 12.2	0.321
BMI (kg/m²)			
Mean ± SD	35.8 ± 9.0	33.9 ± 8.8	0.121
CANCER STAGE (n)			
I	139	93	
II	13	6	
III	16	4	
Not specified	39	31	

Table 2. Outcome Measures

	Robotic (n=207)	Laparoscopic (n=134)	p value
PELVIC LYMPH NODE RETRIEVAL			
Median (Range)	12 (1-34)	12.5 (2-22)	
PERIAORTIC LYMPH NODE RETRIEVAL			
Median (Range)	4 (1-19)	4 (1-17)	
TOTAL LYMPH NODE RETRIEVAL			
Median (Range)	14 (1-43)	16 (2-35)	
CONVERSION TO LAPAROTOMY			
N (%)	5 (2.4)	10 (7.5)	.03
TRANSFUSIONS			
N (%)	1 (0.5)	12 (9.0)	<.0001
OPERATIVE TIME (min)			
Median (Range)	161 (62-366)	180 (92-448)	.01
TOTAL OR TIME (min)			
Median (Range)	229 (118-466)	253 (154-534)	.03
ESTIMATED BLOOD LOSS (mL)			
Median (Range)	50 (10-1200)	150 (10-1600)	<.001
LENGTH OF STAY (d)			
Median (Range)	1 (1-12)	1.5 (1-17)	.002
PERIOPERATIVE COMPLICATIONS			
N (%)	19 (9.2%)	25 (18.7%)	.01