

Study Design Enrolled patients were randomly allocated in two groups according to the use (Group A) or no use (Group B) of the uterine manipulator.

The variables collected included baseline demographic characteristics, perioperative data, final pathology report, adjuvant treatment, and follow-up.

Results 154 patients were randomly allocated in Group A (n=78) and Group B (n=76). A statistically significant difference was found in OT for the laparoscopic staging (p=0.005), while no differences were reported for the robotic procedures.

The EBL was significantly lower in Group B (p=0.030). Only one conversion to laparotomy (1.3%) occurred in Group A. Comparable results were recorded in terms of peritoneal cytology, LVSI (p=0.584), and pattern of lymphovascular spread (p=0.790).

With a median follow-up of 38.7 months, no differences were detected in terms of OS and DFS, and in the number of recurrences. The uterine manipulator had no impact on DFS both at univariate and multivariable analysis.

Conclusions The intrauterine manipulator does not affect the perioperative and oncological outcomes of presumed low-risk endometrial cancer patients undergoing laparoscopic/robotic staging.

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9

FRAILTY IS INDEPENDENTLY ASSOCIATED WITH WORSE OUTCOMES AND INCREASED RESOURCE USE FOLLOWING PROCEDURES TO TREAT ENDOMETRIAL CANCER

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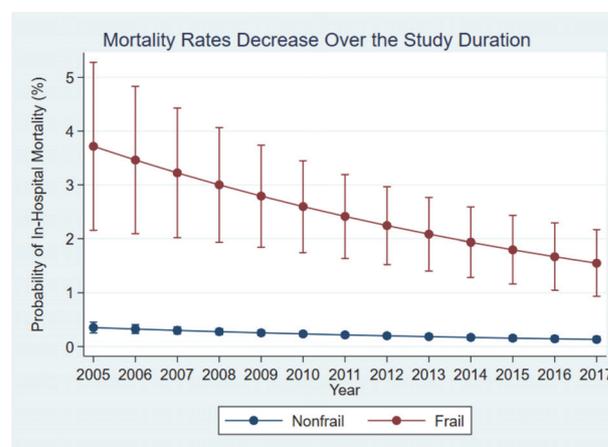
Introduction Frailty has been associated with poorer surgical outcomes and is a critical factor in procedural risk assessment. The objective of this study is to validate surgical outcomes in patients undergoing surgery for endometrial cancer (EC).

Methods Patients undergoing inpatient gynecologic surgery for EC were identified using the 2005–2017 National Inpatient Sample database. The Johns Hopkins Adjusted Clinical Groups (ACG) frailty-defining diagnosis indicator was used to designate frailty. Multivariate regression models were used to assess the association of frailty with post-operative outcomes and resource use.

Results Of an estimated 339,846 patients, 2.9% (9,868) were considered frail. After adjusting for patient and hospital characteristics, frailty was associated with a four-fold increase in inpatient mortality (adjusted odds ratio [AOR]:4.1; p<0.001) and non-home discharge (AOR:5.2; p<0.001), as well as increased respiratory (AOR:2.6; p<0.001), neurologic (AOR:3.3; p<0.001), renal (AOR:2.0; p<0.001), and infectious (AOR:3.2; p<0.001) complications. While frail patients exhibit increased mortality with age (figure 1), the rate of mortality in this cohort decreased significantly over time (figure 2). Compared with non-frail counterparts, frail patients also had longer lengths of stay (7.6 days vs. 3.4 days; p<0.001) and increased hospitalization costs (\$25,093 vs. \$13,405; p<0.001).



Abstract 9 Figure 1



Abstract 9 Figure 2

Conclusion/Implications Frailty is independently associated with worse surgical outcomes, including mortality, and increased resource use in women undergoing surgery for EC. Though there have been improvements in mortality in more recent years, further efforts to mitigate the impact of frailty should be explored.

Plenary III

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10

THE LEARNING CURVE OF ROBOT-ASSISTED LAPAROSCOPY HAS IMPACT ON THE ONCOLOGICAL OUTCOMES OF EARLY STAGE CERVICAL CANCER PATIENTS

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Introduction Previous learning curve studies are focused on short term surgical outcomes of robot-assisted surgery. We are

the first to study the influence of learning curve on recurrence rate and quantify its impact on survival in patients with early stage cervical cancer using a validated analysis.

Methods We included all patients with early stage cervical cancer treated consecutively by one tertiary surgical team with robot-assisted laparoscopy (2007 – 2017). To establish the number of procedures needed to ascertain oncological proficiency, we performed a risk-adjusted cumulative sum (RA-CUSUM) analysis. The impact of the learning curve on oncological outcomes was quantified with Kaplan-Meier survival analysis.

Results In total, 165 patients received radical robot-assisted laparoscopy and had a median follow-up of 57 months (range 3–132 months). Multivariate RA-CUSUM analysis demonstrated a learning phase of 61 procedures. The recurrence rate decreased significantly with increasing experience in robot-assisted laparoscopy. No significant differences in baseline characteristics were observed between patients treated during the learning phase (n=61) and experienced phase (n=104). The 5-year disease-free, disease-specific and overall survival significantly increased in patients treated after the learning phase; 80.2% to 91.1% (P=0.040), 84.7% to 97.7% (P=0.002) and 84.7% to 94.8% (P=0.018), respectively.

Conclusions/Implications In this single institution study we found a learning phase for robot-assisted laparoscopy in cervical cancer of 61 procedures with significant impact on the survival rates. With our analysis we aim to encourage others performing robot-assisted radical surgery for cervical cancer to assess their own learning curves.

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11

ONCOLOGIC OUTCOMES AND ROLE OF ADJUVANT THERAPY IN ENDOMETRIAL CANCER PATIENTS WITH LOW VOLUME METASTASIS IN THE SENTINEL LYMPH NODES: AN INTERNATIONAL MULTI-INSTITUTIONAL STUDY

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Objective To assess recurrence-free survival (RFS) and role of adjuvant therapy (ATx) in endometrial cancer with low volume metastasis (LVM) in sentinel lymph nodes (SLN).

Abstract 11 Table 1 Results from univariate Cox proportional hazards models evaluating factors for an association with recurrence within the first 4 years following surgery among the 186 patients who received external beam radiation therapy and/or chemotherapy ± vaginal brachytherapy

Characteristic	N of events	Unadjusted hazard ratio (95% CI)	P
Age at surgery (years)	29	1.49 (0.99, 2.24) [†]	0.06
BMI (kg/m ²)	29	0.95 (0.75, 1.19) [†]	0.63
Tumor diameter (mm)	29	1.01 (0.99, 1.02) [†]	0.33
Size of SLN metastasis			0.30
ITC (N=82)	10	Reference	
MM (N=104)	19	1.50 (0.70, 3.22)	
Grade			<0.001
1 (N=56)	2	Reference	
2 (N=77)	9	3.17 (0.69, 14.68)	
3 (N=52)	18	11.48 (2.66, 49.52)	
Histology			<0.001
Non-endometrioid (N=32)	13	4.47 (2.15, 9.31)	
Endometrioid (N=154)	16	Reference	
LVSI			0.03
No (N=64)	5	Reference	
Yes (N=117)	24	2.94 (1.12, 7.72)	
Myometrial invasion			0.87
None or <50% (N=67)	10	Reference	
≥50% (N=118)	19	1.07 (0.50, 2.29)	
High risk [‡]			0.02
No (N=46)	1	Reference	
Yes (N=140)	28	10.44 (1.42, 76.77)	
Cervical stromal invasion			0.17
No (N=155)	22	Reference	
Yes (N=31)	7	1.81 (0.77, 4.25)	
Uterine serosal invasion			<0.001
No (N=176)	23	Reference	
Yes (N=10)	6	6.10 (2.47, 15.11)	
Peritoneal cytology			0.15
Negative (N=103)	12	Reference	
Positive (N=19)	6	2.66 (1.00, 7.09)	
Not done (N=64)	11	1.33 (0.59, 3.01)	
Adjuvant therapy			0.97
EBRT ± VB (N=38)	6	Reference	
Chemotherapy ± VB (N=36)	5	0.86 (0.26, 2.80)	
Chemotherapy and EBRT ± VB (N=112)	18	0.94 (0.37, 2.37)	

Abbreviations: BMI, body mass index; CI, confidence interval; EBRT, external beam radiation therapy; ITC, isolated tumor cells; LVSI, lymphovascular space invasion; MM, micro-metastasis; VB, vaginal brachytherapy.
[†]Hazard ratio per 10-year increase in age, per 5-unit increase in BMI, and per 1 mm increase in tumor diameter
[‡]High risk defined as grade 3, non-endometrioid histology, LVSI, cervical stromal invasion, or uterine serosal invasion.

Methods Patients with SLN LVM (≤2 mm) during 2010–2018 were retrospectively collected from 22 centers; stage IV, adnexal involvement, or unknown ATx were excluded. High-risk characteristics were grade (G) 3, non-endometrioid (NE) histology, lymphovascular invasion (LVSI), uterine serosal invasion (USI), or cervical stromal invasion.

Results 243 patients were included [131 isolated tumor cells (ITCs); 112 micro-metastasis (MM)]. The 186 patients who received ATx (external beam radiation therapy and/or chemotherapy) were more likely to be high-risk (75.3% vs. 38.6%) or have MM (55.9% vs. 14.0%) compared to patients without ATx. RFS was 78.1% (95% CI, 70.5–86.5%) at 4 years; median follow-up of patients without recurrence was 29.6 (IQR, 19.1–41.5) months.

The 4-yr RFS was 83.8% (95% CI 73.1–96.1%) among 57 patients without ATx; no significant risk factors identified. In particular, there were 18 G1 non-high-risk patients with ITC and no ATx, of which only 1 has recurred.

G3, NE, LVSI, and USI were associated with recurrence in patients receiving ATx (table 1). G3 or NE patients had poor outcome even with receiving ATx, the 4-yr RFS was 59.5% and 56.1%, respectively.

Conclusion In patients with SLN LVM who received ATx, G3, NE, LVSI, and USI were strong prognostic factors. ITCs patients with G1 and non-high-risk characteristics have good prognosis even without ATx; further analysis is needed, when this cohort matures, to know if ATx can be confidently spared.