Abstracts

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.