Extent of cervical involvement in endometrial cancer predicts survival

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Objective: In endometrial cancer, the extent of myometrial invasion and presence of cervical stromal disease are risk factors for metastasis and recurrence. Uterine cervical involvement is often not known in advance of surgery, and superficial involvement may not be seen at frozen section. The objective of this study was to determine if the extent of cervical invasion is predictive of recurrence and survival.

Methods: Institutional review board approval was obtained at three large academic institutions, and cases of FIGO stage II endometrioid endometrial adenocarcinoma were reviewed. Cases with clinical data and pathologic specimens suitable for review were included. Demographics, extent of surgical procedure, tumor characteristics, presence of lymphvascular space invasion (LVSII) and last follow-up were collected. A gynecologic pathologist at each institution reevaluated pathologic slides to measure depth of cervical stromal invasion. Statistical evaluation included receiver operator curve (ROC), \( \chi^2 \) test, t test, Kaplan–Meier analysis and Cox proportional hazard analysis.

Results: One hundred forty-four cases met inclusion criteria and were available for pathologic review. Sixty-one cases (42%) had gland involvement only, whereas 83 (58%) had stromal invasion. ROC analysis demonstrated 65% stromal invasion (95% CI = 0.53–0.77) to be a significant cutoff for further investigation. Cervical invasion was then categorized as inner two-thirds (77.6%) versus outer one-third (22.4%). Cases with outer one-third cervical involvement were older (age \( \geq \)65, P = 0.013) and had higher-grade tumors (P = 0.048), deep myometrial invasion (P = 0.003), LVSII (P = 0.007) and higher mortality (P = 0.009). Median survival for cases with inner two-thirds invasion has not been reached, whereas median survival for outer one-third invasion was 88 months (95% CI = 52–123, P = 0.04). Regression analysis to control for factors such as myometrial invasion, grade, age, LVSII and receipt of radiation revealed that grade 3 tumors (HR = 2.6, 95% CI = 1.3–5.1) and outer one-third cervical invasion (HR = 2.8, 95% CI = 1.1–7) were independent predictors of survival.

Conclusions: Outer one-third cervical involvement is an independent predictor of survival in stage II endometrial cancers and may provide guidance in selecting adjuvant therapy. Unfortunately, information regarding the extent of cervical involvement may be lost with the transition to the new FIGO grading system, in which all cervical involvement is grouped. Surgeons and pathologists must be able to recognize which pathologic findings outside the final FIGO staging may influence treatment.