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Sentinel Lymph Node Mapping in Endometrial Cancer: Our Initial Experience in a Resource Limited Setting

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Abstract

Background: Nodal status is one of the most important prognostic factors in endometrial cancer (EC), but systematic lymphadenectomy is associated with significant morbidity. Sentinel lymph node (SLN) mapping offers a less invasive alternative. However, data are limited where indocyanine green is unavailable.

Methods: Between November 2019 and March 2025, 29 women with FIGO stage I–III EC were prospectively enrolled in this study. Cervical injection of methylene blue, with or without technetium-99m, was used for SLN mapping. Ultrastaging was performed routinely. In patients with high-risk disease, full pelvic and para-aortic lymphadenectomy was also performed. Detection rates, sensitivity, and negative predictive value (NPV) were calculated.

Results: Overall and bilateral detection rates were 75% and 48%, respectively (methylene blue: 72% / 44%; dual tracer: 100% / 75%). Nodal metastases were identified in 9 of 29 patients (31%). Patient-level sensitivity was 71%, with an NPV of 88%. Application of the side-specific completion algorithm increased sensitivity to 86%. Side-specific sensitivity and NPV reached 100%. Lymphovascular space invasion and > 50% myometrial invasion were significantly associated with nodal metastasis ($p<0.05$). No mapping-related complications were observed.

Conclusions: SLN mapping with methylene blue, with or without technetium, combined with a side-specific completion algorithm, enables reliable nodal staging even without fluorescence imaging.

Keywords: endometrial cancer, sentinel lymph node, methylene blue, lymphadenectomy, resource limited setting, nodal staging