



Memorial Sloan-Kettering
Cancer Center

Update

IN GYNECOLOGIC ONCOLOGY

PROGRESS IN MINIMALLY INVASIVE SURGERY

Sentinel Lymph Node Program

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Evaluation of lymph node metastasis in endometrial cancer has important prognostic and therapeutic implications. Complete pelvic and paraaortic lymphadenectomy provides accurate information on lymph node status. Nevertheless, the majority of patients with stage I disease (90%) will not have any metastasis and will be subjected to the side effects of lymphadenectomy.

The purpose of lymphatic mapping is to identify a sentinel lymph node (SLN) that would be representative of the rest of the lymph nodes draining the tumor. The results of the pathologic examination of the SLN would be indicative of the status of the rest of the nodes, obviating the need for a full lymphadenectomy and avoiding its potential complications, without losing the information on the degree of spread of the cancer.

In general, the identification of the SLN is done through injection of a blue dye, a radioactive colloid (Tc99m), or both. There are three injection sites currently described in lymphatic mapping of endometrial cancer: the subserosal myometrium, the cervix, and the endometrium (hysteroscopically).

As in other solid tumors where lymphatic mapping has become accepted standard practice (breast, melanoma),

lymphatic mapping in endometrial cancer first has to be established as a feasible, reproducible, and accurate technique in determining lymph node status. In other words, it should have a consistently high detection rate and a low false-negative rate.

In 2005, the MSKCC Gynecology Service initiated a prospective study to evaluate the role of lymphatic mapping in endometrial cancer using both radioactive Tc99m and blue dye injected into the cervix, with some cases receiving an additional injection into the uterine fundus. We have recently published our results in grade 1 endometrial carcinoma; we found an overall detection rate of 86% and no false-negative cases [1].

As our experience with this promising technique increased over the last 3 years, we noticed an improvement in our detection rate. Interestingly, similar to the learning phase for SLN mapping recommended in breast cancer and melanoma, our data suggest that after 30 cases, a detection rate of greater than 90% can be achieved.

The false-negative rate is what will ultimately decide whether lymphatic mapping, even if associated with high detection rates, is safe for the patient (a false-negative case means that one or more

metastatic nodes would have been left behind if a concomitant lymphadenectomy would not have been performed). Owing to the relatively limited number of patients included in reported studies and in our own experience, in addition to the relatively low incidence of lymph node metastasis in endometrial cancer, a larger number of patients will be needed before clinically significant false-negative rates can be calculated [2]. Nevertheless, we are encouraged by our results and believe SLN mapping to be a promising technique in assessing lymph node status in endometrial cancer. Associated complications are rare and consist mainly of allergic reaction to the blue dye, with a reported incidence in the literature of less than 2%. There have not been any allergic reactions in our patients.

REFERENCES

1. Abu-Rustum NR, Khour-Collado F, Pandit-Taskar N, et al. Sentinel lymph node mapping for grade 1 endometrial cancer: is it the answer to the surgical staging dilemma? *Gynecol Oncol* 2009;113:163-9.
2. Khoury-Collado F, Abu-Rustum NR. Lymphatic mapping in endometrial cancer: a literature review of current techniques and results. *Int J Gynecol Cancer* 2008;18:1163-8.