

## COMMENTARY

The use of intraoperative lymphatic mapping (IOLM) and sentinel node biopsy has substantially changed the treatment of cutaneous melanoma. Ongoing arguments over elective versus delayed node dissection have ended, replaced by widespread adoption of IOLM among melanoma surgeons worldwide. The single biggest variable affecting success in IOLM is anatomic location. The lymphatic drainage patterns of the trunk, extremities and head and neck are all more variable than originally predicted from cadaver studies. However, the head and neck presents surgeons with by far the greatest challenges. The unique attributes of mapping in the head and neck will challenge an experienced surgical oncologist who performs IOLM predominantly for melanomas of the trunk and extremities. The head and neck is a three-dimensional (3D) anatomic area intertwined with multiple nerves, cosmetic features, and boundaries. The “shine-through” problem limits the surgeon’s efforts to use preoperative lymphoscintigraphy to identify sentinel nodes that overlies radioactive injection sites. Combine the anatomic complexity with the fact that the average surgical oncologist sees few cases of head and neck melanoma, and the result is a learning curve that can be slow and sometimes painful. Conversely, the experienced head and neck surgeon rarely has a high volume of melanoma mapping cases, and cannot leverage the experience that surgical oncologists derive from performing sentinel node biopsies below the clavicle.

Put these technical complexities and turf issues together, and it is no surprise that the acceptance of IOLM for melanoma has been slowest in the head and neck. Meanwhile, controversies abound about indications, techniques, and adjunctive therapies to be used for head and neck melanoma patients. It is in this setting that Gibbs et al. offer their review of surgical therapy of head and neck melanoma. The “bottom line” is that they present no compelling reasons to believe the surgical treatment of melanomas in this location should be fundamentally different than elsewhere in the body. They suggest that IOLM and sentinel node biopsy will become standard care for head and neck melanoma patients.

But are we there yet? Head and neck IOLM, like IOLM for melanomas elsewhere, has improved significant

because of technical improvements in probe design and a better understanding of the anatomic variations. Our experience in trunk and extremity melanoma has taught us to aggressively interrogate multiple drainage sites to identify node-positive patients or exclude unnecessary node dissections if only one site is positive. The courage to attack the parotid in search of sentinel nodes has allowed surgeons to learn to find individual lymph nodes within the confines of parotid tissue without injury to the facial nerve. So the answer appears to be yes, the challenges posed by IOLM in the head and neck can be handled by the well-trained surgical oncologist or head and neck surgeon operating as part of an experienced multidisciplinary team.

There are still, however, many opportunities to improve IOLM in the head and neck. Prospective clinical trials will be necessary to define the limits of use. For example, what is the lower threshold of lesion thickness for IOLM? Conversely, what are the benefits of IOLM in patients with deep melanomas (>4 mm) where, although regional failure is a major issue, traditional wisdom argued against elective node dissection? When micro-metastases are found within the sentinel nodes, what if any modifications of standard neck dissection procedures should be made? What adjuvant therapies, such as radiation and high-dose interferon- $\alpha$ , should be used in the sentinel node-positive patients? Outside the strictly medical sphere, we must also wonder whether reimbursement concerns will cloud the picture in the head and neck if clear data are not available to demonstrate efficacy of IOLM?

We believe that IOLM in the head and neck is a powerful tool to stage and treat melanoma, with extraordinarily high degrees of patient acceptance. At our center, a multidisciplinary approach has allowed general surgical oncologists and head and neck surgeons to work side-by-side and benefit from each others’ expertise. Identical indications are applied to IOLM for head and neck melanomas as for those occurring elsewhere on the skin: all patients with melanomas  $\geq 1.00$  mm and selected patients with melanomas <1 mm (specifically those with ulceration, extensive regression or a positive deep margin) are potential candidates. Likewise, the same approaches to adjuvant therapy are taken, with sentinel node-positive patients

evaluated for adjuvant high-dose interferon- $\alpha$ , and postoperative radiotherapy reserved for patients with gross extranodal extension or multiple positive nodes (situations rarely encountered when clinically negative nodes are found to have microscopic involvement). If the report by Gibbs et al. serves to motivate surgeons to put aside preconceived notions and apply consistent surgical standards to melanomas arising above and below the clavicle, it will be a valuable contribution indeed.

**Riley Rees, MD**

**Vernon K. Sondak, MD**

Department of Surgery

Section of Plastic Surgery and

Division of Surgical Oncology

Multidisciplinary Melanoma Clinic

University of Michigan

Comprehensive Cancer Center

Ann Arbor, Michigan