
Positive sentinel lymph node biopsy in a solid organ transplant recipient with a primary cutaneous squamous cell carcinoma of the nasal tip

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INTRODUCTION

The consideration of a sentinel lymph node biopsy (SLNB) in patients with clinically node-negative high-risk primary cutaneous squamous cell carcinoma (cSCC) remains challenging. A paucity of evidence to guide clinicians results in varied management practices.¹ Recently, the Brigham and Women's Hospital Tumor (BWH-T) staging for cSCC was proposed and seems to more precisely identify possible candidates for sentinel lymph node biopsy.²⁻⁴ We present a patient with a history of a double lung and renal transplantation with an aggressive cSCC who had a positive SNLB. We discuss considerations of a SLNB as it relates to solid organ transplant recipients (SOTRs) with cSCC.

CASE REPORT

A 50-year-old man with a medical history of a double lung transplant for chronic obstructive pulmonary disease 2 years prior and a kidney transplant for cyclosporine-induced nephrotoxicity was referred to the dermatology department for evaluation of a lesion involving his nasal tip. His medications included azathioprine, cyclosporine, prednisone, voriconazole, and warfarin. He had no personal or family history of skin cancer.

He noticed the lesion 3 months before presentation and reported it was growing and intermittently bleeding. On examination, a 1-cm ulcerated erythematous nodule was noted on his nasal tip. A shave biopsy found cSCC with ulceration and impetiginization.

Definitive surgical management was delayed by multiple hospitalizations for, among other things,

Abbreviations used:

BWH-T:	Brigham and Women's Hospital Tumor
cSCC:	cutaneous squamous cell carcinoma
SLNB:	sentinel lymph node biopsy
SOTRs:	solid organ transplant recipients

acute purulent cholecystitis requiring cholecystectomy and thrombosis of his allograft renal vein and inferior vena cava requiring percutaneous mechanical thrombectomy.

The patient returned for Mohs micrographic surgery 3 months after the initial biopsy, by which time the tumor had enlarged to 2 cm and was ulcerated (Fig 1). There were no intransit metastases or lymphadenopathy on examination. Frozen sections showed moderate differentiation, perineural invasion, and extension to cartilage. Removal of small portions of the septal cartilage, upper lateral nasal cartilages, and part of the dome of the lower lateral alar cartilages was required to obtain histologic tumor-free margins. The resulting defect measured 4.5 × 4.0 cm. Reconstruction was delayed for further evaluation and staging.

Positron emission tomography and computed tomography scanning found no evidence of local, regional, or metastatic disease. The patient was referred to otorhinolaryngology where a safety margin was obtained because of the highly aggressive features of the tumor. No residual tumor was identified in the safety margin. The resulting defect was reconstructed with a paramedian forehead flap. Sentinel node lymphoscintigraphy found drainage to 3 sentinel nodes: a left neck lymph node, a right neck

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Fig 1. Two-centimeter cSCC with ulceration on the nasal tip before Mohs micrographic surgery.

lymph node, and a right lateral cheek lymph node. One of 3 lymph nodes (left side of the neck) was positive for grade 2 (of 4, moderately differentiated) squamous cell carcinoma, and a level I through III left neck dissection was completed. No additional lymph nodes were positive for malignancy.

The radiation oncology department recommended adjuvant external beam radiation therapy. The patient elected not to complete radiation therapy.

The patient tolerated the procedures well until shortly after the takedown of the paramedian forehead flap. The patient's wife was concerned that the patient was becoming depressed, not eating, and drinking only minimal fluids. The patient denied suicidal ideation. Several attempts were made to convince the patient to return for further evaluation. Ten days after the paramedian forehead flap takedown (approximately 5 months after his initial presentation to the dermatology clinic) the patient died of unknown causes at his home.

DISCUSSION

In this case, a SOTR with an aggressive cSCC underwent SLNB, which found metastatic disease in one lymph node. He had been on voriconazole for 19 months before the initial consultation in July 2005. More than a year later, the first suggestion of a link between voriconazole and cSCC was reported.⁵ Voriconazole was continued through the course.

This tumor would be staged as a T2 lesion in the American Joint Committee on Cancer seventh edition staging system (perineural invasion and Clark level \geq IV) and a T2b lesion in the BWH-T staging system (tumor diameter \geq 2 cm, perineural invasion \geq 0.1 mm, and tumor invasion beyond fat).^{2,6}

Although SLNB is safe and is used to identify occult nodal disease, this case highlights knowledge gaps in our understanding of nodal staging for cSCC.⁷ The use of SLNB, although useful in staging disease in this patient, should not be considered the standard of care but should be considered on a case-by-case basis.

One knowledge gap is the proper identification of patients for whom SLNB be considered and offered. The BWH-T staging system appears to stratify disease by the risk of nodal metastasis with rates of 21% and 67% for T2b and T3 tumors, respectively.⁵ The validity of this staging system was supported by a meta-analysis of sentinel lymph node biopsy rates according to tumor stage.⁴ Although these data have provided some clarity on proper patient selection, further validation of the staging system is necessary.

A second knowledge gap is the sensitivity and specificity of SLNB for patients whose disease is staged with an increased risk of nodal metastasis. A recent systematic review of cSCC of the head and neck identified 73 patients and suggests the false omission rate (regional recurrence in a nodal basin found to be negative on prior SLNB) to be approximately 5% (similar to melanoma).⁸ Additional prospective trials with appropriate follow-up are needed to elucidate the accuracy of this diagnostic procedure. A third knowledge gap is the relationship between SLNB results for cSCC and patient outcomes. Although it seems biologically plausible that early intervention of occult nodal disease will improve patient outcomes, the data to support or refute this assumption are currently lacking.

While we await data for the gaps listed above, clinicians must use their clinical judgement and the available data to provide patient care. Despite worse outcomes of cSCC in SOTRs, neither the American Joint Committee on Cancer nor BWH-T staging systems consider immunosuppression or a history of organ transplant when staging disease.⁹ With this background and the currently available data, we recommend using the BWH-T staging system and considering SLNB in SOTR with \geq T2b tumors until more data are collected.

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