

Diagnostic accuracy of combined optical- and radio-guided SNB for staging of OSCC lesions in the anterior oral cavity

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Introduction:

Previous studies have reported a lower diagnostic accuracy of radio-guided SNB for staging OSCC in the floor of the mouth (FOM) due to the shine-through effect. The purpose of this study was to investigate the diagnostic performance of bimodal optical and radio-guided SNB for OSCC sub-sites in the anterior oral cavity.

Methods:

Prospective single-arm study of consecutive patients with primary OSCC in the anterior oral cavity and cN0 scheduled for SNB staging. Fifty consecutive patients were enrolled. Patients were given a peritumoral injection of the tracer complex Tc99m:ICG:Nacocoll followed by lymphoscintigraphy and SPECT/CT. Intraoperatively, a near-infrared camera and a hand-held gamma probe were applied for SN detection. Anterior unilateral or bilateral level 1b and level 1A were initially explored with the optical camera and the gamma probe and then resected as a supra-selective neck dissection in all patients.

Results:

In 12/50 (24%) of cases a SN, not visualized on preoperative SPECT/CT, was detected intraoperatively.

In 28/50 cases (58%) an additional SN was identified only due to optical imaging intraoperatively. All additional nodes were located in anterior level 1b and 1a close to the injection site. In two cases, an additional SN identified only by near-infrared navigation contained a metastasis and resulted in upstaging.

At follow-up, no N-site recurrences in SNB-negative patients was detected and the false negative rate of SNB was 0%.

Discussion:

This study supports the need for optical imaging in conjunction with conventional radio-guidance for accurate staging the cN0 neck of OSCC in the anterior oral cavity.

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