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Titel des Beitrags: Freehand SPECT for image-guided sentinel lymph node biopsy in breast cancer.

Abstract: Sentinel lymph node biopsy (SLNB) is standard of care in early-stage breast cancer. Freehand SPECT (FhSPECT) is a system generating 3-D images for intraoperative visual detection of radioactivity in the body. The aim of our study was to evaluate the sensitivity of this technology for sentinel lymph node (SLN) detection and SLNB guidance. In 40 patients, FhSPECT was additionally used after planar imaging and probe localization for SLNB. The number of SLNs detected was compared with the number detected by planar scintigraphy (reference method) and the conventional acoustic gamma probe (standard alternative). The sensitivity of FhSPECT was compared with that of the conventional gamma probe (McNemar's test). FhSPECT mapped the SLNs in 92.3 % of the basins (36/39) intraoperatively in identical positions to those seen on planar scintigrams. The conventional gamma probe correctly detected the SLNs in 35 of 39 basins (89.7 %). After SLNB, remaining radioactivity was detected by FhSPECT in nine patients, resulting in additional resection of SLNs in four patients. FhSPECT is a highly sensitive modality for intraoperative detection of SLNs, resulting in the identification of a higher number of SLNs than conventional gamma probe detection.

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