

Medical > In Vivo > Melanoma & Pigmented Lesion Research

62

Correlation of Handheld Reflectance Confocal Microscopy With Radial Video Mosaicing for Margin Mapping of Lentigo Maligna and Lentigo Maligna Melanoma.

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ABSTRACT

IMPORTANCE:The management of lentigo maligna (LM) and LM melanoma (LMM) is challenging because of extensive subclinical spread and its occurrence on cosmetically sensitive areas. Reflectance confocal microscopy (RCM) improves diagnostic accuracy for LM and LMM and can be used to delineate their margins. **OBJECTIVES:**To evaluate whether handheld RCM with radial video mosaicing (HRCM-RV) offers accurate presurgical assessment of LM and LMM margins. **DESIGN, SETTING, AND PARTICIPANTS:**This prospective study included consecutive patients with biopsy-proven LM and LMM located on the head and neck area who sought consultation for surgical management from March 1, 2016, through March 31, 2017, at the Dermatology Service of the Memorial Sloan Kettering Cancer Center. Thirty-two patients underwent imaging using HRCM-RV, and 22 patients with 23 LM or LMM lesions underwent staged surgery and contributed to the analysis. **MAIN OUTCOMES AND MEASURES:**Clinical lesion size and area, LM and LMM area based on HRCM-RV findings, surgical defect area estimated by HRCM-RV, and observed surgical defect area. In addition, the margins measured in millimeters estimated for tumor clearance in each quadrant based on HRCM-RV findings were calculated and compared with the surgical margins. **RESULTS:**Among the 22 patients (12 men and 10 women; mean [SD] age, 69.0 [8.6] years [range, 46-83 years]) with 23 lesions included in the final analysis, the mean (SD) surgical defect area estimated with HRCM-RV was 6.34 (4.02) cm² and the mean (SD) area of surgical excision with clear margins was 7.74 (5.28) cm². Overall, controlling for patient age and previous surgery, surgical margins were a mean of 0.76 mm (95% CI, 0.67-0.84 mm; $P < .001$) larger than the HRCM-RV estimate. **CONCLUSIONS AND RELEVANCE:**Mapping of LM and LMM with HRCM-RV estimated defects that were similar to but slightly smaller than those found in staged excision. Thus, mapping of LM using HRCM-RV can help spare healthy tissue by reducing the number of biopsies needed in clinically uncertain areas and may be used to plan treatment of LM and LMM and counsel patients appropriately. PMID: 29049429 DOI: 10.1001/jamadermatol.2017.3114