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Melanoma in situ: Imaging technique improves margin mapping

October 10, 2020

[John Jesitus](#)



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Performing reflectance confocal microscopy (RCM) with a mosaic technique before surgery can improve margin mapping in melanoma in situ (MIS), according to a recent study presented at 2020 ASDS Virtual Annual Meeting.

Co-author Catherine Tchanque-Fossuo, M.D., M.S., says that MIS margins are very relevant because some currently available tools are not ideal for a disease that can potentially recur and become more aggressive. She is a third-year resident in the University of New Mexico Department of Dermatology.

When one considers subclinical spread, Dr. Tchanque-Fossuo explains, determining the extent of MIS can be very difficult. Based on experience and evidence, dermatologists traditionally have used 5 mm surgical margins.

“But we’ve found that many times, that margin is not enough because the cancer actually spreads further,” she adds. “If you think about an iceberg, what you see may just be the tip.”

However, Dr. Tchanque-Fossuo says, MIS can extend considerably – not downward, but outward – from what is visible on the epidermis.

To address this challenge, Dr. Tchanque-Fossuo and colleagues used RCM mosaics (Vivascope 1500, Caliber ID) to determine margins in the treatment of 22 patients with biopsy-proven MIS. Whereas handheld RCM devices can only image an area of 0.75 mm², the mosaic device digitally stitches together multiple images to quickly

examine areas up to 8 mm x 8 mm. “We had the idea to do this process prior to surgery. That’s what’s innovative.”

RCM uses low-level laser energy to provide *in vivo* imaging at the nuclear and cellular level, achieving almost histological resolution, says Dr. Tchanque-Fossuo. After determining tumor borders with dermatoscopy, investigators divided the borders into 1 cm linear segments with a surgical marker. Because ink is invisible on confocal microscopy, investigators made superficial incisions with a 15 blade to ensure that the marked margin was well correlated on confocal imaging as this technology peered through skin layers.

To detect residual melanoma, investigators used RCM to mark each segment approximately 5 mm beyond the original markings. Once clear margins were identified, investigators looked at least 3 mm beyond these margins to ensure tumor clearance and check for skip areas.

Subsequently, a Mohs surgeon removed the tumor that was mapped per confocal as a debulk specimen; then a 3 mm surgical margin was used as the first layer of the staged excision. The specimen was prepared as permanent section and evaluated by a dermatopathologist. The surgeon subsequently excised any positive margins with an additional 3 mm margin until clear.

With RCM, 20 patients (91%) achieved MIS clearance with single-stage excision using a 3 mm margin. Mean total margin needed from clinical lesion to tumor clearance was 10.1 mm.

Being able to accurately characterize margins presurgically reduces the chances of missing residual tumor and recurrence, says Dr. Tchanque-Fossuo. Margin optimization also may allow patients to undergo fewer surgical layers, thereby simplifying reconstruction. “Many melanomas *in situ* happen on the head and neck, where tissue preservation is key. We really tried to optimize those margins and clear the tumor.”

Dr. Tchanque-Fossuo and colleagues hope their innovation can be used in the future, provided institutions can acquire the confocal device and the expertise to interpret results.

“We are hoping that this technique will help avoid unnecessary stages, decreasing the cost of the procedure and allowing patients to avoid multiple excisions and delayed closure. This will be potentially life-changing for patients.”

Presently, she adds, current procedural terminology (CPT) codes used for reimbursement do not reflect all the time and complexity involved with presurgical RCM-assisted margin mapping.

“We are hoping our study will prompt the people in charge of those codes to improve reimbursement.”

Disclosures: Dr. Tchanque-Fossuo reports no relevant financial interests.

References:

John R Durkin MD, Catherine Tchanque-Fossuo MD, MS, Alexander N Rose BS, et al. [“Surgical Margin Mapping of Melanoma in Situ Using in Vivo Reflectance Confocal Microscopy Mosaics,”](#) American Academy of Dermatologic Surgery Virtual Annual Meeting. October 10, 2020.

3D imaging technique measures severity of atrophic acne scars

October 11, 2020

[Ilya Petrou, M.D.](#)



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There is a dire need to improve the clinical tools dermatologists use to assess the severity of acne scars. This 3D imaging technique may help, according to a recent study presented at the 2020 virtual American Society for Dermatologic Surgery (ASDS) meeting.

A novel 3D imaging technique may help dermatologists accurately measure and grade the severity of acne scars as well as the aesthetic improvements achieved following scar therapy in atrophic acne scar patients, according to a recent study