Routine Use of Ex Vivo Dermoscopy With "Derm Dotting" in Dermatopathology

To the Editors:

Recently, Amin and Fraga[1] presented in this journal their experience with ex vivo dermoscopy of cutaneous biopsies for melanocytic lesions. They reexamined 517 melanocytic neoplasms and were able to correlate in most cases the dermoscopic patterns with the microscopic findings. Reevaluation of 25 remaining ambiguous lesions with concurrent ex vivo dermoscopy images (EVDI) lead to a definite diagnosis in 16 cases, only 7 remained inconclusive. They recommend EVDI as a valuable adjunct to histopathology and a surrogate for less than optimal clinical information.

Scope et al[2] already described the use of this method in dermatopathology and correlated the ex vivo pictures with the in vivo pictures of the same lesions. They advocate the diagnostic aid of this technique in the macroscopy of the skin biopsies and its usefulness as first step to guide tissue sectioning in gross pathology.

Since 2012, we also routinely take an ex vivo dermoscopic image of most pigment lesions and other tumoral lesions we receive at our dermatopathology laboratory. We use a dermlite II dermoscope that is connected to a Nikon 1-J1 camera. As described by Amin and Fraga,[1] the disposition of this extra information during the microscopic examination is very helpful especially in ambiguous lesions and the evaluation of section margins of the lesion.

As mentioned by Scope et al,[2] with this tool, technicians who handle the tissue can better orient and decide how to process and cut the lesion. In our laboratory, the 2 technicians responsible for the processing of skin biopsies have learned the basic dermoscopic principles and use this extra information to bring

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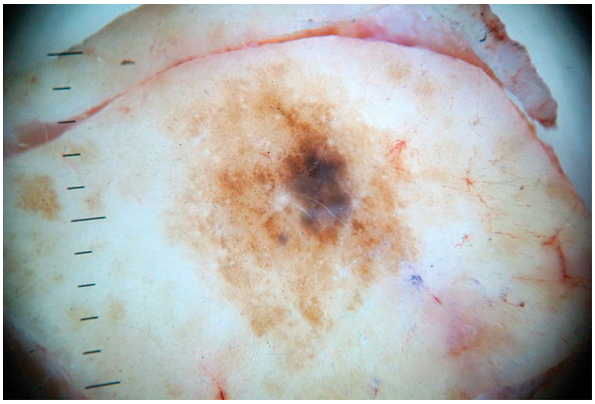

FIGURE 1. Ex vivo dermoscopic picture of an irregular nevus with a new black dot.

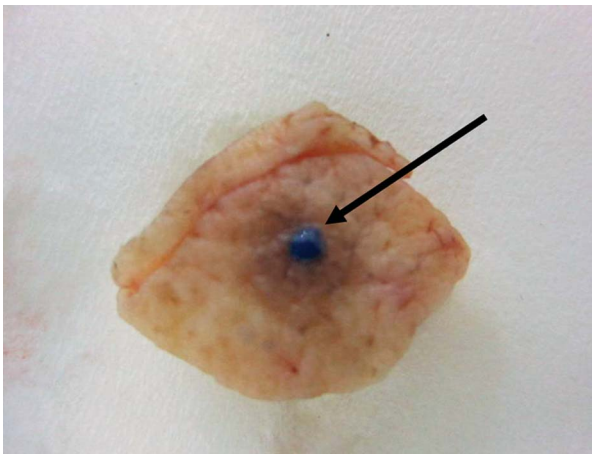

FIGURE 2. Blue varnish marking of the black dot.

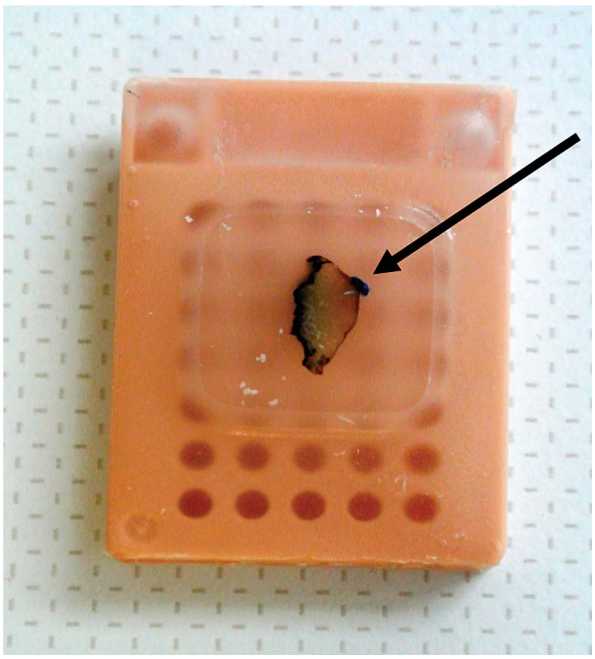

FIGURE 3. Tissue block cut at the level of the dotted area.

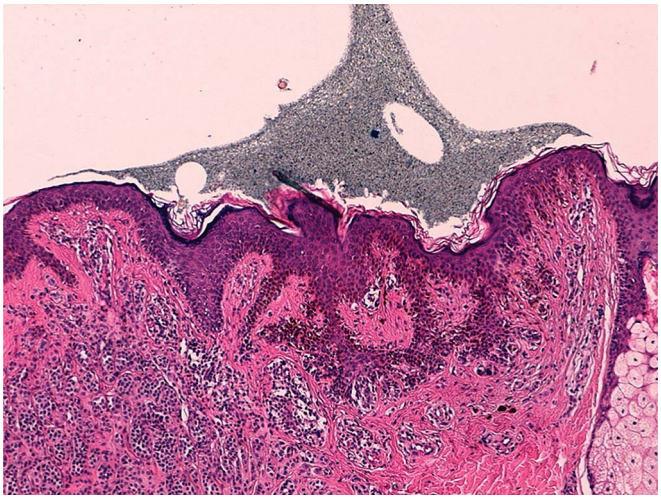

FIGURE 4. Dotted area corresponds to the area of focal hyperpigmentation with lentiginous epithelial reaction.

the most diagnostic tissue cuts on the microscope slide. Especially in lesions where the dermatologist excises a lesion because of a focal change or new lesion in a skin tumor, the EVDI enables the technician to include the diagnostic zones in the chosen tissue block.

To optimize the use of this extra information, we developed a simple and cheap marking system that makes it possible to recognize and trace this diagnostic areas revealed by the dermoscopy. Black dots, areas of depigmentation, structureless zones, ulcerated areas, and suspicious section margins are marked with a simple color dot immediately after their detection with the dermoscope (Figs. 1, 2). For this "derm dotting", we use standard nail varnish. This type of varnish dries very fast and enables us to make marks from 1 to 3 mm. The product is applied with a brush for larger marks and with a toothpick for smaller dots. The color dot is resistant to the different tissue processing phases and permits the technician to cut safely and immediately into the center of the diagnostic zone. The dot area is easily discernable while cutting the block (Fig. 3). Under the microscope, the marked zone is recognized as a thick black gray granular plaque on the horny layer with a thickness of 2–3 mm (Fig. 4). We do not only use this derm dotting for pigment lesions but also for other tumoral lesions where dermoscopy shows diagnostically interesting areas. Narrow margins seen on the EVDI can be selectively marked, selected for imbedding, and easily traced under the microscope. Ulceration, important in staging of pigment lesions, is often inadequately assessed with current standard techniques. With this marking system, we can cut right in the center of the ulcerative part and stage the lesion in a correct way. Also basal cell carcinomas often penetrate deepest in their ulcerated part, and examination of this part leads to a more correct assessment of thickness and more secure margin evaluation. Finally, in the smaller whole-mounted lesions, the center of the lesion can be marked to lead the technician safely when cutting the block.

We are very enthusiast about this technical "trick" and have happier technicians who have to make less numerous deeper cuts. Besides this important economical time-saving advantage, it also upgrades the work of the processing technicians who become part of the diagnostic process. The technique is simpler than the micropunch technique developed by Braun et al.[3] Furthermore, our technique does not interfere with the quality of the histology of the underlying lesion. Their marking system with a 1-mm micropunch creates an artifact in the biopsy that interrupts the histological picture and that can create problems in the handling of the

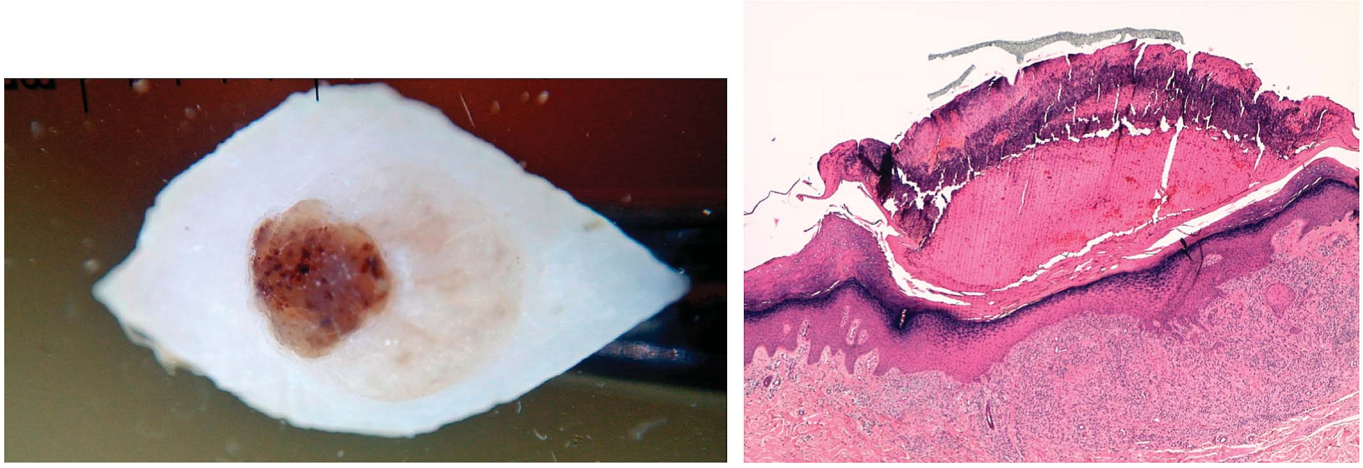

FIGURE 5. Traumatized nevus with marked fibrino pustulous crust formation.

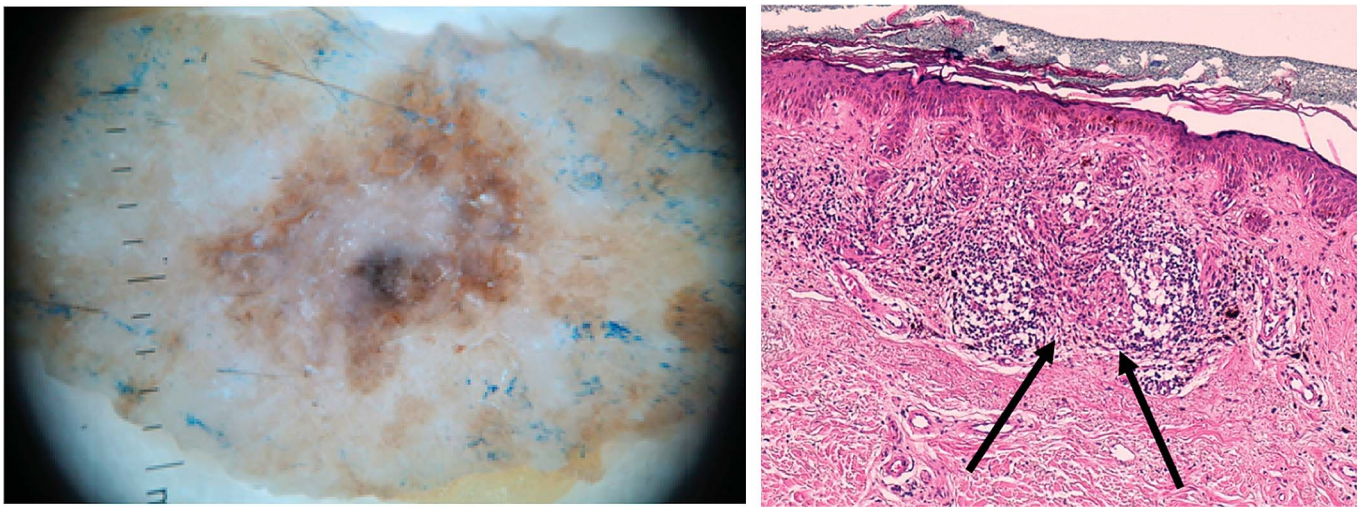

FIGURE 6. Melanoma in situ with central structureless pale zone, after derm dotting corresponding to the zone of maximal vertical invasion with a depth of 0.39 mm.

tissue section. The derm dotting can also be, as in their study, primarily done by the referring dermatologist just before the resection of the lesion. In this setting, however, a part of the dermoscopic information is hidden for the dermatopathologist. We prefer to have the intact dermoscopic picture and decide ourselves which areas will be marked.

Finally, it enables the dermatopathologist to better understand the lesion and make a mirror correlation with the dermoscopic information. Black dots, blue zones, depigmentation zones, and areas of hemorrhage are easily traceable and find their histological explanation (Figs. 5, 6). This individualized skin biopsy approach, however, demands a continuous communication and education of the dermatopathologist and his technical staff. We believe that this derm dotting technique of dermoscopically selected areas makes diagnosing a lesion by the dermatopathologist more fun, more accurate, and at the end makes him more confident when signing out the protocol he was interpreting the right spot of the lesion and was not making a false-negative or understaged diagnosis. It can be an interesting, economizing, cheap, and easily implementable technique for all dermatopathology laboratories.

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