

# An easy technique for the measurement calibration of a universal serial bus dermatoscope



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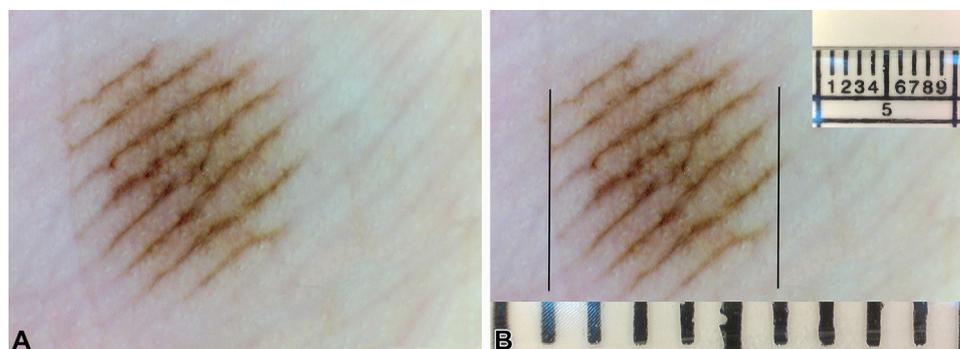
**Key words:** calibration; dermatoscope; dermoscopy; measurement; tips and tricks.

## CLINICAL CHALLENGE

Size is an essential attribute in dermatology during the initial assessment and tracking of progression of a lesion; it also significantly influences the diagnostic accuracy of dermoscopy.<sup>1</sup> Affordability, maneuverability, and ease of use make universal serial bus (USB) dermatoscopes ideal tools for wide variety of applications in dermatology, including telemedicine, teaching, and following up lesions.<sup>2</sup> However, because of the various magnification levels and the lack of measurement calibration in most USB dermatoscopes, it is difficult to compare the size and track the progression of a lesion in the images obtained by those dermatoscopes.

## SOLUTION

A dermoscopic image of a melanocytic lesion was obtained by using a USB dermatoscope (DE300, Firefly, Belmont, MA) (magnification, 20×) (Fig 1, A). We used the same dermatoscope at the same magnification level to take an image of a regular ruler with millimeter markings placed on a white paper (Fig 1, B [inset]). The area with mm markings from the second image was copied and pasted over the first image (Fig 1, B); the lesion showed a measurement of 5 mm. The markings thus obtained can also be drawn by using any image editing software and pasted over any dermoscopic images taken at same magnification for a cleaner and unobtrusive look (Fig 2, A). For comparison, we took a dermoscopic image of the same lesion in the same orientation using a



**Fig 1. A,** Dermoscopy with a Firefly DE300 dermatoscope. **B,** Dermoscopy procedure in which a regular ruler with millimeter markings is placed on a white paper (inset), after which the measurement markings are copied from the second image and pasted over the first image. (A and B, Polarized dermoscopy; original magnifications: ×20.)

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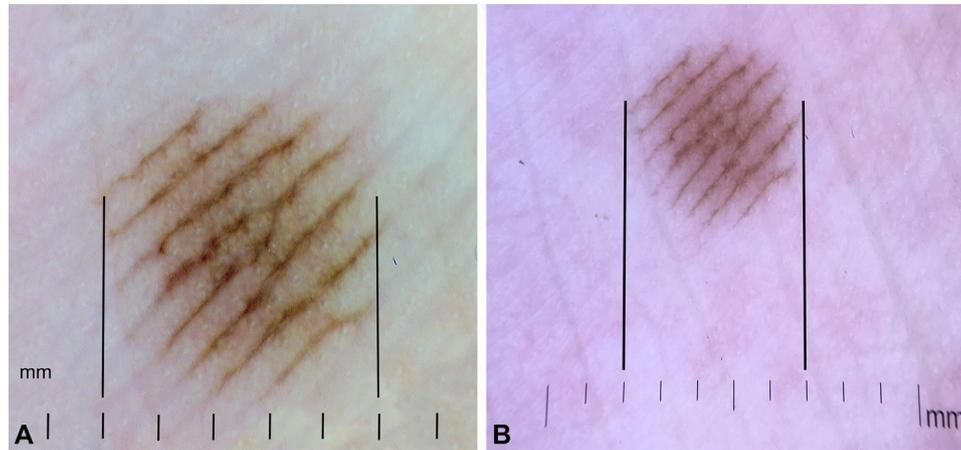
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**Fig 2.** **A**, Measurement markings drawn clearly by using image editing software and pasted over the original image. **B**, Dermoscopy (with a DermLite DL3N operating in a 10 $\times$  polarized mode) of the lesion with measurement markings. Note that the lesion shows the measurement of 5 mm in both images taken at different magnifications.

calibrated DermLite DL3N dermatoscope (3Gen Inc, San Juan Capistrano, CA) (magnification, 10 $\times$ ) (Fig 2, B). Although the images were taken at different zoom levels, the lesion showed the same measurement in both of them; thus, measurement calibration of the USB dermatoscope was successfully performed.

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