

## CASE AND RESEARCH LETTER

### [Translated article] Ultrasound Image of a Stair-Like Border in Circumscribed Palmar Hypokeratosis



#### Hipoqueratosis palmar circunscrita: signo de la escalera ecográfico

To the Editor:

Circumscribed palmar hypokeratosis (CPH), described for the first time in 2002 by Pérez et al.,<sup>1</sup> is characterized by a solitary reddish scaly lesion with well-defined borders. Otherwise asymptomatic, CPH lesions are typically located on the thenar or hypothenar eminences of the hand or in the midplantar region of the foot and progress for years before a physician is consulted.<sup>1–5</sup> CPH resembles Bowen disease and actinic porokeratosis, conditions that must be ruled out. Histologic features are a steep stair-like depression in the epidermis, with thinning of the stratum corneum and a granular appearance that contrasts with adjacent skin.<sup>1,2,4</sup> In CPH no cornoid lamella can be observed in serial sections of biopsied tissue, differentiating this diagnosis from actinic porokeratosis.<sup>1,2</sup>

A 65-year-old woman with no prior medical history of interest consulted us for an asymptomatic lesion on the hypothenar eminence of her left hand. She reported that it was unrelated to friction or injury. Physical examination revealed a solitary pinkish plaque 14 mm along the longest axis. The plaque had clearly defined borders, was slightly depressed, not infiltrated, and not scaling (Fig. 1).

High-frequency ultrasound imaging was performed in B and Doppler color modes with a 10–22 MHz linear probe (Esaote MyLab Class C, Genoa, Italy). The B-mode image revealed abrupt epidermal thinning, with structural loss in a double hyperechogenic layer that sloped to form a single hyperechogenic layer under which a subepidermal low-echogenic band (SLEB) could be seen. The Doppler color image ruled out abnormal vascularization.



**Figure 1** Photograph of the patient's left palm, showing an erythematous, pinkish, slightly depressed plaque on the hypothenar eminence. The lesion has well-circumscribed borders and measures 14 mm along the longest axis.

The case is noteworthy for good correlation between the ultrasound images and histologic features in biopsied tissue (Fig. 2).

CPH is a benign condition, but it should be conclusively diagnosed to rule out Bowen disease.

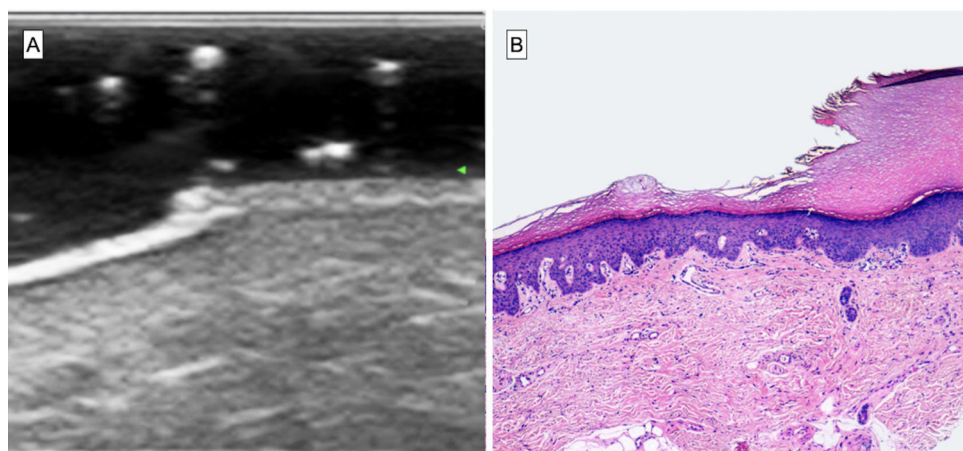
Approximately 50 to 70 case reports of CPH have been published to date and all describe histologic findings consistent with a depression corresponding to stair-like epidermal thinning.<sup>4,5</sup> Few diagnostic images can be found in the literature, however.

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**Figure 2** Correlation between ultrasound and histologic findings. A, B-mode ultrasound image, 22 MHz. Area of abrupt epidermal thinning, sloping downward, with structural loss in a double hyperechogenic layer of acral skin. The image is similar to the stair-like sign. SLEB (a subepidermal low-echogenic band) can be observed under the affected epidermis. B, Histopathology shows an abrupt depression in the epidermis due to corneal layer thinning and shedding. The high correlation between ultrasonography and histology is evident.

Images recently obtained by optimal coherence tomography in 4 patients with CPH<sup>5</sup> showed a nearly abolished stratum corneum, although the lucidum and granulosum strata were preserved. In 1 patient in that series, high-frequency ultrasound showed the stair-like sign with good histologic correlation.

Characteristic CPH findings were also described by a group using the DermaScan high-frequency ultrasound device.<sup>4</sup> Loss of structure could be seen in acral skin, where there was thinning of the double echogenic layer, which abruptly dropped to form a single echogenic layer with the decreasing echogenicity of SLEB, findings that correspond to the stair-like sign. The images obtained with the DermaScan device were difficult to interpret, however, and this device is little used in our practice setting.

This report of a case of CPH with histopathologic confirmation also describes high-frequency B-mode ultrasound findings, a diagnostic technique available to dermatologists in our current practice settings in Spain. With this use of ultrasound imaging, a confirmed diagnosis can be reached without resorting to invasive techniques.

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## Conflicts of Interest

The authors declare that they have no conflicts of interest.

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