

of the RAS-ERK pathway. Thus, suppression of protein SHP-2 favors tumorigenesis owing to abnormality of the STAT3 pathway, which is also involved in the pathogenesis of the melanoma.¹⁰

Despite the fact that few cases have been reported in the medical literature, we must take into account the probable increased risk of melanoma in patients with NSML. Therefore, patients should undergo periodic and exhaustive dermatologic follow-up to identify atypical and/or recent lesions. The phenotypic characteristics in this syndrome make this task an authentic challenge for dermatologists, although digital follow-up based on body mapping could help in its management.

Declaration of Competing Interest

The authors declare that there is no conflict of interest.

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Pseudoflow in adnexal skin tumors[☆]



Pseudoflujo en tumores anexiales cutáneos

Sr. Director:

The use of ultrasound (US) in dermatology is highly extended specially for the diagnosis of malignant and benign neoplasms,¹ in addition color and power Doppler US allow assessment of tissue vascularity.² However a variety of Doppler artifacts have been documented in the literature.² We described two cases of pseudoflow in the context of cutaneous hidrocystomas that can lead to an erroneous diagnosis. No previous reports of this Doppler artifact in skin tumors have been published in the reviewed literature.

CASE 1: We present the case of an 80-year-old woman with a bluish papule of indeterminate time of evolu-

tion located on the left cheek (Fig. 1). The lesion was asymptomatic. Ultrasound showed a subdermal hypoechoic cystic lesion with turbulent color Doppler flow (Fig. 2). Venous ectasia was suspected and surgical removal was performed. The final histopathology diagnosis was hidrocystoma. CASE2: The second case was a 72-year-old man with a translucent nodule in the right temple (Figure 3). Clinical diagnosis was suggestive of a hidrocystoma. In the US exploration we also observed a hypoechoic cystic lesion with turbulent color Doppler flow (Figure 4). Final histopathology diagnosis was consistent with clinical diagnosis of hidrocystoma.

Chin and associates evaluated several hidrocystomas using US. They suggested that these structures showed a cystic lesion with hyperechoic surface and either a hypoechoic center (lipofuscin debris) or an echolucent center (clear fluid).³ Perez-Lopez et al. stressed the absence of flow inside this structures.⁴ However, in our cases we have seen that sometimes this structures can show positive Doppler signal.

Because color and power Doppler US are used to assess tissue vascularity, it is tempting when one finds a positive Doppler signal, to assume the color in the image

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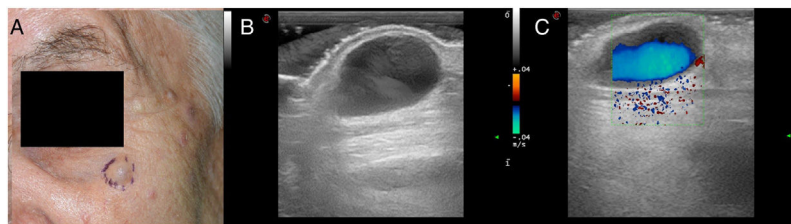


Fig. 1 CASE 1. (A) Clinical image: bluish nodule located on the left cheek. (B) US image. B-mode: Subdermal heterogenic hypoechoic cystic lesion. (C) US image. Color-Doppler: turbulent color Doppler flow.

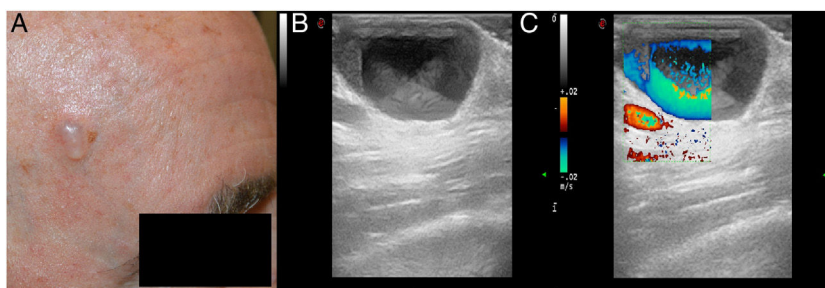


Fig. 2 CASE 2. (A) Clinical image: translucent nodule on the right temple. (B) US image. B-Mode: hypoechoic cystic lesion. (C) US image. Color-Doppler: turbulent color Doppler.

to blood flow. However this assumption can lead to misinterpretation.²

Pseudoflow is a Doppler artifact related to motion of other fluid rather than blood in the absence of a vascular structure, and appears similar to real blood flow at color or power Doppler US. The color or power Doppler signal will appear as long as the fluid motion continues. But if we use Spectral analysis, it shows a pattern inconsistent with vascular flow.²

Histologically, hydrocystomas are characterized by presenting a cystic appearance, with a wall composed by epithelium, and the lumen containing variable amounts of secretions. Intralesional fluid movement has been recently reported by Dr. Wortsman in a recent series of apocrine hidradenomas, in which fluid movement could be detected even in B mode, confirming intralesional fluid movement in this kind of adnexal skin tumors.⁵

In our cases, the movement of the interior material of the hydrocystoma led to an image in the color Doppler that can be incorrectly interpreted as vascular flow.

Knowledge of the color and power Doppler artifacts, and the use of spectral analysis will prevent misinterpretation of these artefactual pitfalls and may improve diagnosis accuracy.²

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