

CASE REPORT

Ultrasound Overview of Epidermoid Cyst

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ABSTRACT

Skin ultrasound is a low-cost, rapid, non-invasive diagnostic imaging technique introduced in dermatological practice. The present article carries out an ultrasound overview of an epidermal cyst for therapeutic purposes.

INTRODUCTION

Skin ultrasound is a non-invasive, fast and low-cost diagnostic imaging technique that has been progressively introduced into the practice of dermatology, being a useful and practical tool for making therapeutic decisions. The development of this technique requires high and ultra-high frequency (12 - 20 MHz) ecosonographs, which are adequate to provide precise information on skin structures.^{1,2}

Epidermal cysts, erroneously called sebaceous cysts, are slow-growing, asymptomatic, well-defined, dome-shaped superficial lesions, measuring between 1 and 5 cm in diameter. These can be hard or fluctuating in consistency, as well as firm or mobile. They frequently manifest on the trunk, neck, face and limbs.

The epidermal cyst is a cystic structure located on the thickness of the dermis and hypodermis. It is composed of epidermal elements constituted by a granular layer of keratinous material, cholesterol crystals, and it occasio-

nally presents a tract that connects the lesion with the subepidermal layer called "PUNCTUM" or central pore. It can manifest in the inflammatory stage, and partially or totally broken giving as a result keratinous material leaks into the surrounding tissues, generating inflammation, scarring and then fibrosis.^{3,4,5}

Next, a description of ultrasound findings of the epidermal cyst is presented:

SONOGRAPHIC FINDINGS

Ultrasound findings will be determined by the type of cyst and stage it is in at the time of the study. (Fig.4).

Intact cyst: Presents well-defined contours, rounded or oval, of anechoic or hypoechoic shape, found in the dermal or hypodermic thickness with or without the presence of "PUNCTUM" (Fig. 1).

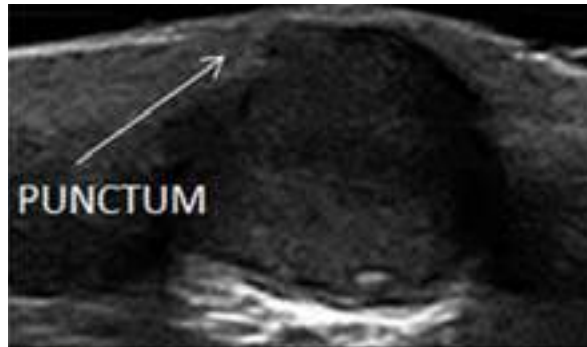


Figure 1. Inclusion cyst with Punctum.

Presence of lateral acoustic shadows (Fig. 2) .

It occasionally presents a posterior acoustic enhancement artifact (Fig.3) and hyperechogenic imaging in relation to calcifications (uncommon).

Some cysts present pseudotesticular patterns due to the presence of cholesterol crystals, or adopt an “onion ring” pattern, given by layers of keratin.

- **Inflammatory cyst:** It presents all previously described characteristics plus the presence of increased vascularity observed with the following tools: color Doppler or Power Doppler.
- **Partially ruptured cyst:** What characterizes the partial rupture of the cyst is the deformity of the contours and the presence of hypoechogenic areas in the periphery in relation to the keratinous material leaked through the solution of continuity. They present an increased color Doppler or peripheral Power Doppler signal.



Figure 2. Inclusion cyst with lateral acoustic shadows.



Figure 3. Inclusion cyst with posterior acoustic enhancement.

- **Completely ruptured cyst:** It presents deformity of the contours, with peripheral hypoechoogenic structures with occasional posterior acoustic enhancement and increased echogenicity of the surrounding hypodermis, which is also associated to increased vascular flow at the periphery of the lesion.

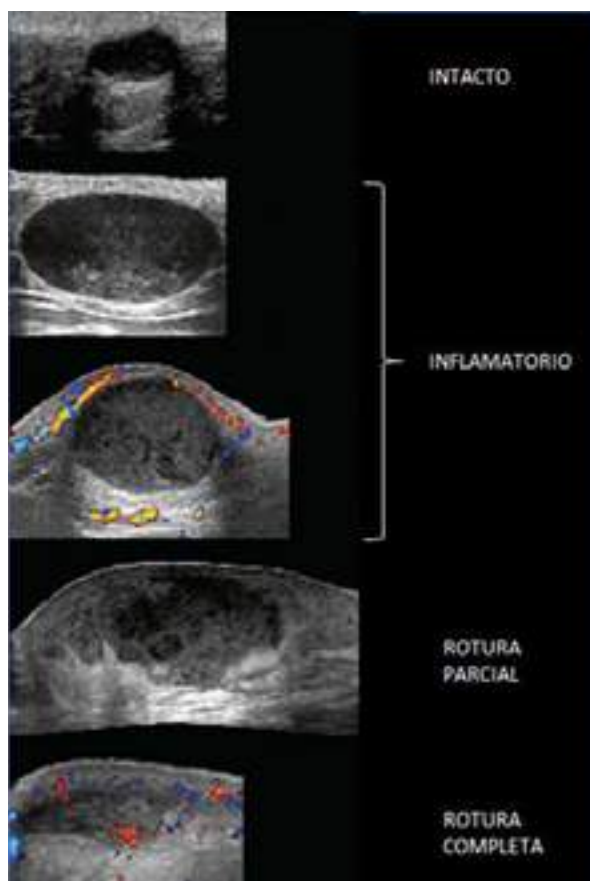


Figure 4. Different stages of the inclusion cyst.
Source: Atlas of Dermatologic Ultrasound (Ximena Worstman).

CONCLUSION

Skin ultrasound is a low-cost, rapid diagnostic imaging method that provides additional information, which is useful for the decision-making on a better surgical approach by dermatologic surgeons.

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