



(CASE REPORT)



Proliferative trichilemmal cyst of the plantar surface: An unusual localization: A case report

El Aissaoui Imane, Mahioui Mimoun *, Bouazza Omar, Taybi Otmene, El adak Hanane and Dehhaze Adil

Department of plastic, reconstructive and aesthetic surgery, Center for burned patients, CHU Mohamed VI Tangier, Morocco.

World Journal of Advanced Research and Reviews, 2026, 30(02), 1315-1318

Publication history: Received on 31 January 2026; revised on 10 May 2026; accepted on 18 May 2026

Article DOI: <https://doi.org/10.30574/wjarr.2026.30.2.0107>

Abstract

Trichilemmal cysts, also known as pilar cysts, are benign dermal epithelial tumors arising from the hair follicle, most commonly located on the scalp. Localization on the plantar surface is extremely rare. We report the case of a 27-year-old male presenting with a firm, mobile mass on the lateral plantar surface of the left foot, causing hyperkeratosis and functional discomfort while walking, without limitation in daily activities. The lesion had progressively enlarged over two years. Ultrasound revealed a subcutaneous, heterogeneous, isoechoic mass with ill-defined margins and marked peripheral Doppler vascularization. MRI showed a homogeneous, T1-isointense lesion without diffusion restriction and mild peripheral gadolinium enhancement. Surgical excision revealed a well-demarcated, reddish, friable mass. Histopathological analysis demonstrated a cystic structure lined by stratified squamous epithelium without a granular layer. The cyst contained compact, trichilemmal-type keratin with central calcification. The pericyclic stroma consisted of fine fibrous tissue, and a superficial peripheral venous network was noted. No atypia or malignancy was observed. This case highlights the unusual plantar localization of trichilemmal cysts and underscores the importance of histological examination for definitive diagnosis, particularly in lesions with atypical clinical or radiological features.

Keywords: Trichilemmal cyst; Pilar cyst; Plantar localization; Proliferative cyst; Case report; Histopathology

1. Introduction

Trichilemmal cysts are benign dermal epithelial tumors derived from the outer root sheath of hair follicles [1,3]. They predominantly occur on the scalp, and extremity involvement is exceptionally rare [1,5]. This report describes an unusual plantar localization of a proliferative trichilemmal cyst, highlighting its clinical, radiological, and histopathological features.

2. Case Report

A 27-year-old male presented with a mass on the lateral plantar surface of the left foot, causing hyperkeratosis and discomfort while walking. The lesion had progressively enlarged over a two-year period. On examination, the mass was firm, mobile relative to both superficial and deep planes, measuring approximately 4 × 3.5 × 2 cm. There was no pain at rest, no palpable lymphadenopathy, and no neurovascular deficits. The initial clinical impression suggested a lipoma or epidermoid cyst.

* Corresponding author: Mahioui Mimoun



Figure 1 Clinical appearance of the trichilemmal cyst on the lateral plantar surface of the left foot [CHU Mohammed VI, Tangier]

2.1. Imaging

Ultrasound revealed a heterogeneous, isoechoic subcutaneous mass with ill-defined margins and marked peripheral vascularization on Doppler [6]. MRI showed a homogeneous T1-isointense lesion, without diffusion restriction, and mild peripheral enhancement after gadolinium administration.



Figure 2 MRI T2-weighted sequence showing the lesion as hyperintense

2.2. Treatment

The lesion was surgically excised. Intraoperatively, it appeared as a well-demarcated, reddish, friable mass. The defect was closed by direct suturing.



Figure 3 Intraoperative photograph of the excised specimen

2.3. Histopathology

The excised specimen measured approximately $4 \times 3.5 \times 2$ cm. Histological examination revealed a cystic wall lined by stratified squamous epithelium without a granular layer. The cyst contained compact, trichilemmal-type keratin with central calcification. The pericyclic stroma was composed of fine fibrous tissue, and a superficial peripheral venous network was observed. No cytological atypia or mitotic activity was present, confirming the benign nature of the proliferative trichilemmal cyst [1,4].

3. Discussion

Trichilemmal cysts are keratinocyte-derived lesions arising from the outer root sheath of hair follicles [1,3]. They typically occur on hair-bearing areas, with a female predominance [1,5], and are usually solitary or multiple [4,6,7]. Plantar localization is extremely rare [1,5]. Clinically, these cysts are firm, well-circumscribed, and slow-growing, as observed in our patient. Differential diagnoses include epidermoid cysts and lipomas [1,5]. Definitive diagnosis relies on histology: trichilemmal cysts exhibit abrupt, compact trichilemmal keratinization without a granular layer, whereas epidermoid cysts show conventional epidermoid keratinization [1,5]. Surgical excision is curative, given the cyst's encapsulated nature, and histological examination is essential to exclude malignancy [8].

4. Conclusion

Proliferative trichilemmal cysts are benign follicular tumors that rarely occur on the plantar surface, making diagnosis challenging because of their atypical localization and nonspecific clinical presentation. This case emphasizes the importance of considering trichilemmal cysts in the differential diagnosis of plantar soft tissue masses. Histopathological examination remains essential for confirming the diagnosis and excluding malignant transformation. Complete surgical excision is both diagnostic and curative, with an excellent prognosis.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

“Informed consent was obtained from all individual participants included in the study.”

References

- [1] Laumann AE, James WD. *Trichilemmal cyst (pilar cyst): Overview, pathology, and clinical features.*
- [2] Pinkus H. “Sebaceous cysts” are trichilemmal cysts. *Arch Dermatol.* 1969 ;99 :544–555.
- [3] Seidenari S, Pellacani G, Nasti S, Tomasi A, Pastorino L, Ghiorzo P, et al. Hereditary trichilemmal cysts: a proposal for clinical diagnostic criteria. *Clin Genet.* 2013 ;84 :65–69.
- [4] Cavaleiro LH, Viana Fde O, Carneiro CM, Miranda MF. Proliferating trichilemmal tumor: Case report. *An Bras Dermatol.* 2011;86: S190–2.
- [5] Ye J, Nappi O, Swanson PE, Patterson JW, Wick MR. Proliferating pilar tumors: Clinicopathologic study with benign and malignant criteria. *Am J Clin Pathol.* 2004 ;122 :566–74.
- [6] Weiss J, et al. *Localisation inhabituelle pulpaire d’un kyste trichilemmal proliférant. Chirurgie de la Main.* 2013 ;32(2) :117–119.
- [7] Oujdi S, Baybay H, Boularbah S, Elloudi S, Soughi M, Douhi Z, Mernissi FZ. Proliferating trichilemmal cyst of extra cephalic location: case report. *Asp Biomed Clin Case Rep.* 2023 ;6(2) :103–105.
- [8] Alshaalan Z, Patel P, Routt E, Ciocon D. *Proliferating pilar tumor: literature review and case reports. J Drugs Dermatol.* 2021 ;20(12) :1346.