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Case Report

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The Dorsal Hand: An Extremely Uncommon Site for a Pilar Cyst

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Introduction

Pilar cysts, also known as trichilemmal cysts, are benign proliferations originating from the outer root sheath of hair follicles [1]. Clinically, they present as firm, mobile, subcutaneous nodules with smooth overlying skin [2]. Pilar cysts are most commonly found in middle-aged female patients (age 31-60) [2,3]. It is estimated that they account for approximately 24% of cutaneous cysts and occur in about 5-10% of the population [2,3].

Around 90% of pilar cysts are located on the scalp [4] but they can occasionally occur in other areas of the body with higher follicular density such as the face, head, and neck [2,5]. Rarely, pilar cysts have been reported in other locations, such as the trunk, axilla, and hand. Herein, we present a case of a pilar cyst occurring on the dorsal hand, a location that has been documented only once prior in the literature [6].

Case

A 78-year-old man with an history of actinic keratoses and basal cell carcinoma presented to dermatology clinic for a full skin exam with an asymptomatic lesion on his left hand that had been present for months. Physical exam revealed a 7 mm flesh-colored and dome-shaped subcutaneous papule on his left ulnar dorsal hand (Figure 1). At the time of examination, the lesion was suspected to be either a dermatofibroma or neurofibroma. A shave biopsy of the lesion was performed, and histologic examination revealed a pilar cyst lined by stratified squamous epithelium with trichilemmal differentiation and containing compact keratin (Figure 2). The patient was reassured that the lesion was benign, and no further treatment was needed.

Discussion

Pilar cysts, also known as trichilemmal cysts, are relatively common benign cutaneous lesions arising from the hair follicle's outer root sheath. They typically present as asymptomatic, slow-growing nodules on the scalp [2]. However, their occurrence on the dorsal hand is extremely uncommon and may pose diagnostic challenges.

The only other reported case of dorsal hand pilar cyst was described in *Medicine (Baltimore)* [6]. Similarly, their 76-year-old male patient presented with an asymptomatic, atraumatic lesion and without systemic symptoms. He denied a family history of such lesions. Interestingly, Liu, et al. also included dermatofibroma in their differential diagnosis prior to histologic examination [6], similar to our case. The authors recognized the occurrence of a dorsal hand pilar cyst as rare. But perhaps the locations of such lesions are underreported given perceived lack of significance of such a finding. We encourage clinicians who encounter such a presentation to report it.

Other cystic lesions such as epidermal cysts or ganglion cysts may be more commonly encountered on the dorsal hand. Epidermal cysts demonstrate epidermal keratinization, with keratohyaline granules and flattened epithelium, while ganglion cysts lack an epithelial lining, instead having an irregular, thick-walled space with focal myxoid change in the surrounding matrix [7].

The relatively rare occurrence of pilar cysts on the dorsal hand prompts consideration of predisposing factors or underlying genetic associations. While most pilar cysts occur sporadically, familial cases that follow autosomal dominant inheritance patterns have been reported [5], suggesting a genetic predisposition. Kolodney, et al., report that familial pilar cysts likely result from a two-hit mutation to the phospholipase C delta 1 (*PLCD1*) tumor suppressor gene [8]. However, further research investigating genetic markers associated with pilar cyst development, particularly

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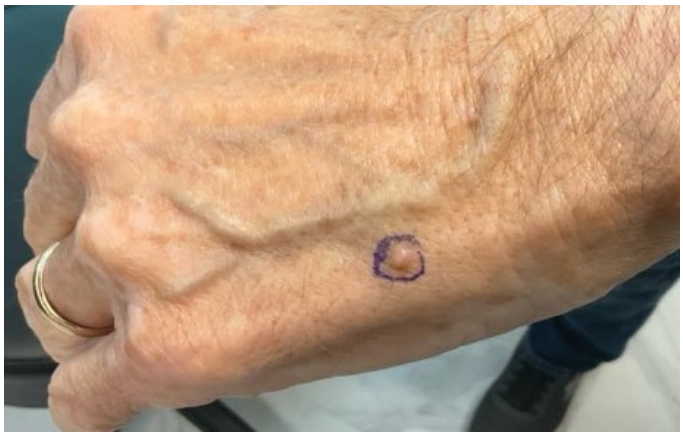

Figure 1: Lesion on the dorsal hand circled with surgical ink.

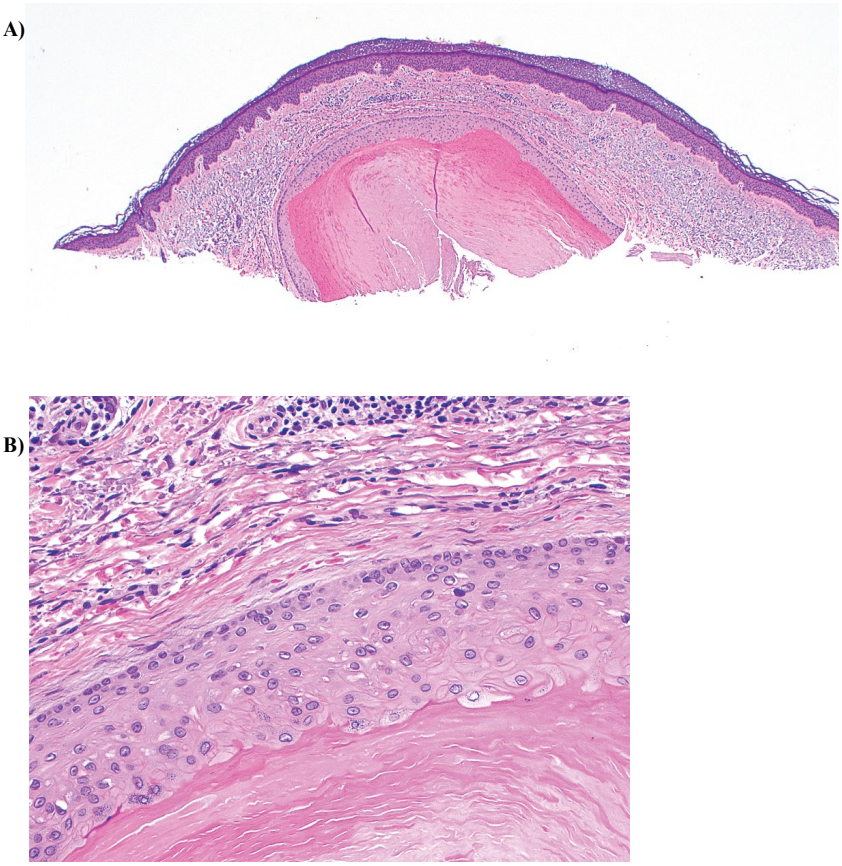

Figure 2: Hematoxylin-eosin (H&E) staining of the lesion at (A) 20x original magnification, showing a cyst centered in the mid to deep dermis, and at (B) 200x original magnification lined by stratified squamous epithelium and containing compact keratin. Note the large size, pallor, and more vertical orientation of some of the innermost cells, and the absence of a granular cell layer. In addition, solar damage and perivascular chronic inflammation were present.

in atypical locations, may provide valuable insights into their pathogenesis.

While pilar cysts are typically benign and pose little risk of malignancy, there have been rare reports of malignant transformation, leading to the development of proliferating pilar tumors (PPTs) or pilar cyst carcinomas [9]. Unlike some pilar cysts, proliferating pilar tumors are likely generated sporadically. Furthermore, malignant cases demonstrate distinct histologic features and frequent *TP53* mutations, suggesting a non-UV-related pathogenesis and an indolent clinical course with rare metastasis [10].

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Conflicts of Interest

None.

References

1. Pinkus H (1969) "Sebaceous cysts" are trichilemmal cysts. Arch Dermatol 99: 544-555.
2. Kang S, Amagai M, Bruckner AL, et al. (2019) Fitzpatrick's Dermatology, 9th edition. McGraw-Hill Education.
3. Kamyab K, Kianfar N, Dasdar S, et al. (2020) Cutaneous cysts: A clinicopathologic analysis of 2,438 cases. Int J Dermatol 59: 457-462.
4. James WD, Elston DM, Treat JR, et al. (2020) Andrews' Diseases of the Skin: Clinical Dermatology. (13th edn), Elsevier, 636-685.
5. Al Aboud DM, Yarrarapu SNS, Patel BC (2023) Pilar Cyst. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing.
6. Liu M, Han H, Zheng Y, et al. (2020) Pilar cyst on the dorsum of hand: A case report and review of literature. Medicine 99: e21519.
7. Singh R, Gupta A, Elsensohn A, et al. (2020) Ace the boards: Dermatopathology. (1st edn), Ace My Path.
8. Kolodney MS, Coman GC, Smolkin MB, et al. (2020) Hereditary trichilemmal cysts are caused by two hits to the same copy of the phospholipase C Delta 1 Gene (PLCD1). Sci Rep 10: 6035.
9. Brownstein MH, Arluk DJ (1981) Proliferating trichilemmal cyst: A simulant of squamous cell carcinoma. Cancer 48: 1207-1214.
10. Moran JMT, DeSimone MS, Mariño-Enríquez A, et al. (2023) Malignant proliferating pilar tumor: Clinicopathologic, immunohistochemical, and molecular study of 17 cases. Am J Surg Pathol 47: 1151-1159.

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