Dermatology Practical & Conceptual

# Scalp Porokeratosis: Dermoscopy Key Role in Unmasking a Hidden Condition

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## Introduction

Porokeratosis encompasses a spectrum of disorders affecting epidermal keratinization characterized by the presence of a cornoid lamella on histopathology [1]. While porokeratosis can manifest in various locations, lesions are typically found on the trunk and extremities. However, rare instances of porokeratosis arising on the sun-damaged scalp of elderly patients have been documented. This anatomical location, a common site for actinic keratosis (AK) occurrence, poses diagnostic challenges due to overlapping clinical and dermoscopic features between the two conditions [2,3]. Despite this, porokeratosis is often overlooked in the differential diagnosis of scalp lesions. Herein we present four cases of scalp porokeratosis, highlighting their clinical, histopathological, and dermoscopic features.

## Case Presentation

Four histopathologically confirmed cases of scalp porokeratosis in elderly males, aged 60 to 84, with skin types 3 and 4 are presented. The lesions were localized in areas devoid of hair due to androgenetic alopecia (AGA). Clinically, the lesions manifested as erythematous rough scaly plaques on sun-damaged areas with multiple lentigines. Dermoscopic examination revealed consistent features across all lesions, including an annular double-edged hyperkeratotic scale, with vascular structures observed in three patients, shiny white structures in three, and follicular plugs in three. One patient presented with multiple scalp lesions, while the remaining three had solitary lesions. There were no lesions elsewhere on the body besides the scalp in the four patients. On histopathology, all cases presented with cornoid lamella

**Table 1.** Clinical Characteristics of the Patients.

| Case# | Age | Sex | AGA | Dermatoscopic Features | | | | Single vs multiple | Treatment |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Keratin rim (hyperpigmented) | Vascular structures | Shiny white structures | Follicular plugs | | |
| 1 | 72 | M | Yes | Yes | Yes | Yes | Yes | Single | Cryotherapy |
| 2 | 76 | M | Yes | Yes | No | Yes | Yes | Single | Cryotherapy |
| 3 | 84 | M | Yes | Yes | Yes | Yes | Yes | Single | Cryotherapy |
| 4 | 60 | M | Yes | Yes | Yes | No | Yes | Multiple | Cryotherapy |
| Thomsen et al.* | 83 | M | Yes | -- | -- | -- | -- | Single | -- |
| Gomez-Zubiaur et al.** | 82 | M | Yes | No | Yes | No | Yes | Multiple | N/A |
| Naineni et al.*** | 66 | M | Yes | -- | -- | -- | -- | Multiple | No active treatment |
| Sidwell et al.+ | 70 | M | Yes | -- | -- | -- | -- | Multiple | Cryotherapy |
| Nenoff et al.++ | 62 | M | Yes | -- | -- | -- | -- | Multiple | Topical urea + tretinoin |

Abbreviations: AGA: androgenetic alopecia; M: male; N/A not available or not described. * *J Cutan Pathol* 1979 Apr;6(2):134-38; ** *Int J Trichology* 2022 Jan-Feb;14(1):25-27. *** *Clin Exp Dermatol* 2007 Mar;32(2):222-3. + *Br J Dermatol* 2003 Sep;149(3):654. ++ *Hautarzt* 2011 Jul;62(7):544-7.

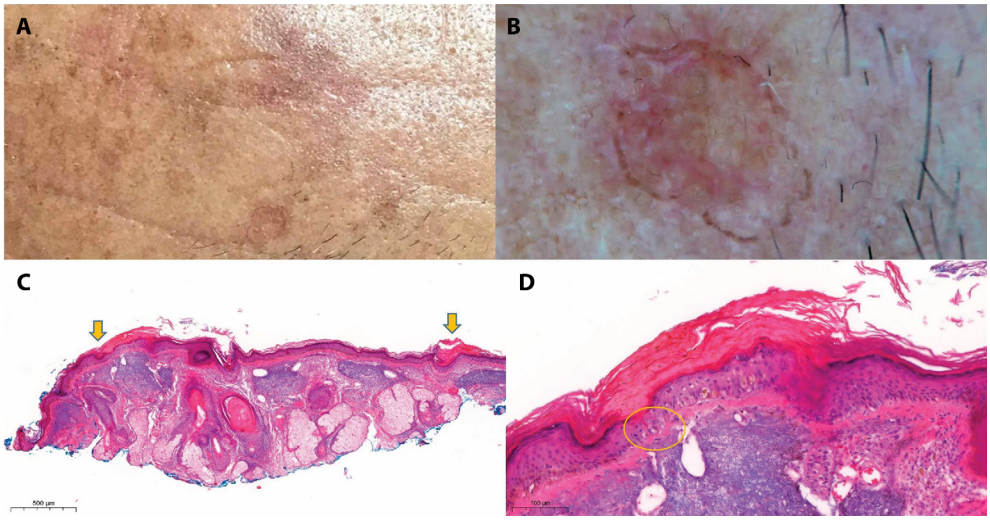


**Figure 1.** (A) Clinical, (B) dermoscopic, and (C, D) histopathological images of patient number 1. H&E staining highlights the cornoid lamella characterized by alternating columns of hyperkeratosis and parakeratosis (yellow arrows) in the epidermis, with underlying orthokeratosis. There is a loss of the granular layer and evidence of dyskeratosis in the epidermis beneath the cornoid lamella (yellow circle).

characterized by columns of hyperkeratosis and parakeratosis. Loss of granular layer and dyskeratosis in the epidermis under the cornoid lamella was also present. Detailed characteristics of the patients are summarized in Table 1. Clinical, dermatoscopic, and histopathologic photos are presented in Figures 1-2. Patients were treated with cryotherapy with complete response.

## Conclusion

Our small cohort highlights four cases of porokeratosis affecting only the scalp of older men with androgenetic alopecia (AGA), a typical area for actinic keratosis (AK). The overlapping risk factor of chronic UV exposure underscores the importance of distinguishing between these conditions, yet porokeratosis remains under-recognized in this anatomical location. Dermoscopy emerges as a valuable tool for diagnosing scalp porokeratosis as it exhibits consistent features with those observed elsewhere on the body, particularly the characteristic double-edged hyperkeratotic rim of scale. Moreover, additional diagnostic modalities such as ink-enhanced dermoscopy [4], ultraviolet-induced fluorescence dermoscopy (UVFD), and reflectance confocal microscopy [5] may aid in differentiation from AK, the primary differential diagnosis.

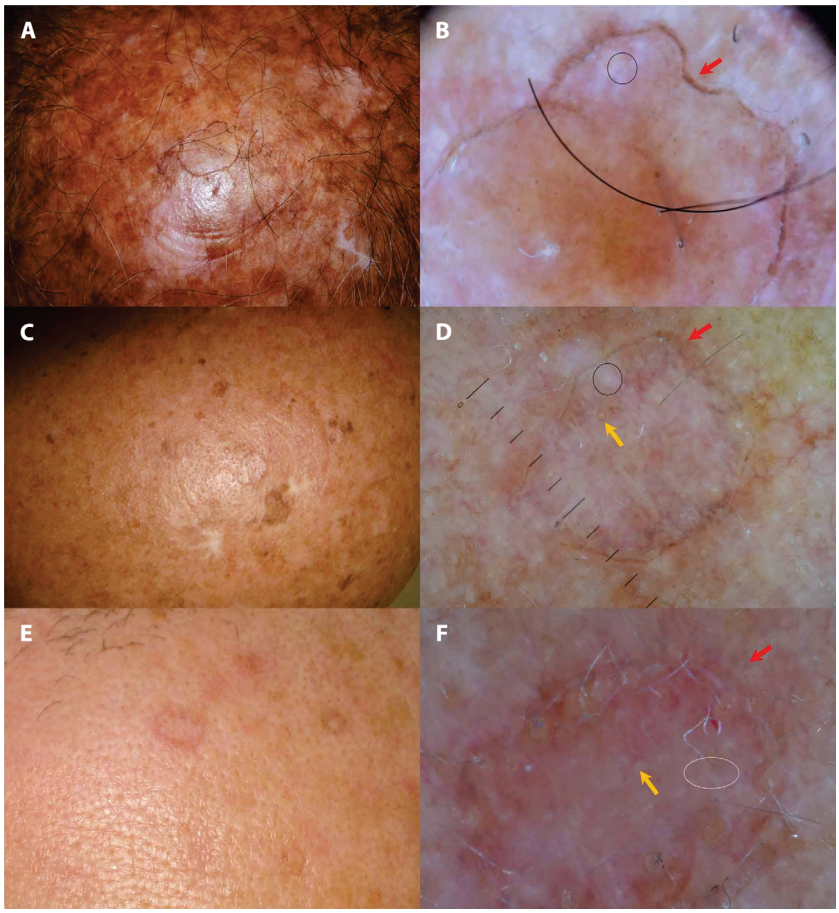


**Figure 2.** Clinical and dermoscopic photos of patients (A, B) 1, (C, D) 2, and (E, F) 3. Dermoscopic photos show keratin rim (red arrows), follicular plugs (yellow arrows), vascular structures (white circles), and shiny white structures (black circles).

In conclusion, porokeratosis should be considered a potential differential diagnosis for scalp lesions, necessitating accurate diagnosis for appropriate management. With advancements in targeted therapy, novel treatments like topical cholesterol/lovastatin offer promising options for porokeratosis, emphasizing the significance of its recognition in dermatologic practice [6].

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