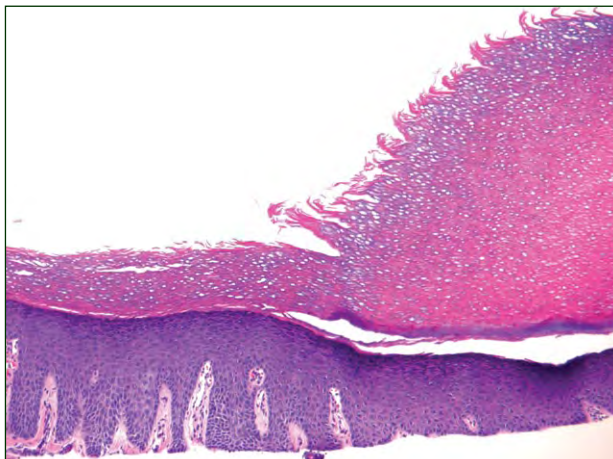




H&E, original magnification $\times 40$.



H&E, original magnification $\times 100$.

The best diagnosis is:

- a. circumscribed acral hypokeratosis
- b. epidermolytic acanthoma
- c. porokeratosis
- d. squamous cell carcinoma in situ
- e. tinea nigra

PLEASE TURN TO PAGE 19 FOR DERMATOPATHOLOGY DIAGNOSIS DISCUSSION

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Circumscribed Acral Hypokeratosis

Circumscribed acral hypokeratosis (CAH) is an idiopathic condition that clinically presents as a solitary, round, depressed plaque with a slightly raised border. It typically affects the palmar aspect of the hand or rarely the sole.¹ Histopathology reveals a broad area of hypokeratosis demarcated by a sharp cutoff from uninvolved acral skin (Figure 1). The border between affected and unaffected stratum corneum often is frayed (Figure 2).² The hypokeratotic zone may show

compact orthokeratin atop thin zones of parakeratosis as well as hypogranulosis.

Porokeratosis clinically may present similar to CAH with a circumscribed annular plaque and a threadlike raised border. Histologically this raised border corresponds to the cornoid lamella, which is composed of a thin column of parakeratotic cells often at a 45° angle, associated with underlying hypogranulosis and dyskeratotic or vacuolated keratinocytes (Figure 3). In porokeratosis, 2 cornoid

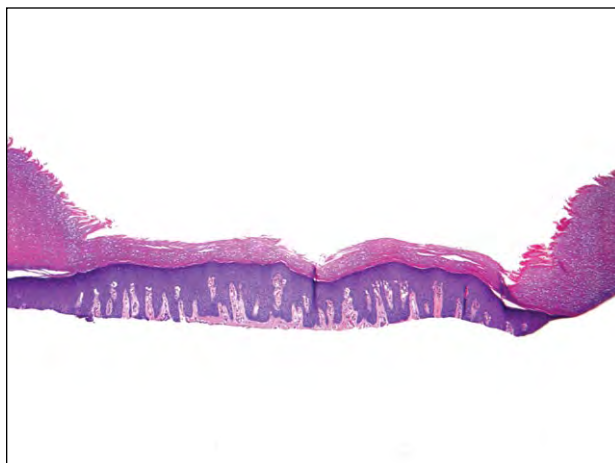


Figure 1. Broad zone of hypokeratosis demarcated by a sharp cutoff from uninvolved acral skin, which is characteristic of circumscribed acral hypokeratosis (H&E, original magnification $\times 40$).

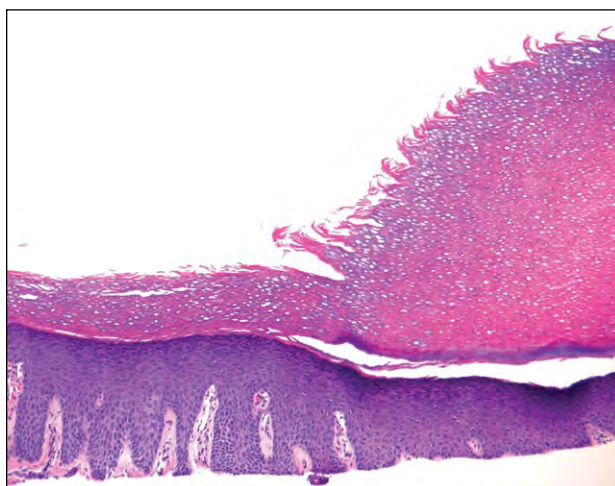


Figure 2. Frayed border between affected and unaffected stratum corneum of circumscribed acral hypokeratosis (H&E, original magnification $\times 100$).

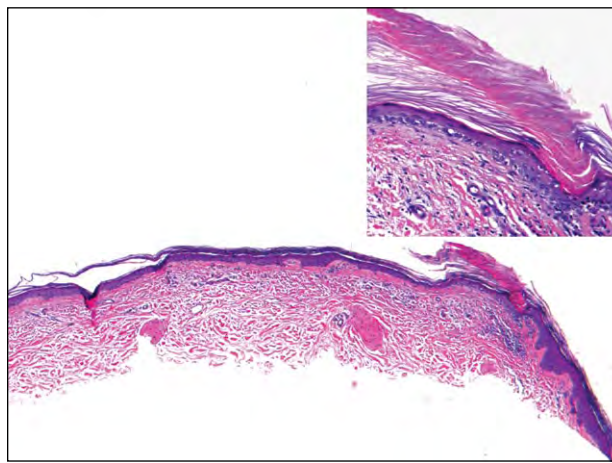


Figure 3. Lesion of porokeratosis revealing an atrophic epidermis (H&E, original magnification $\times 40$) with an adjacent cornoid lamella composed of a column of parakeratotic cells and underlying dyskeratotic keratinocytes (H&E, original magnification $\times 200$ [inset]).

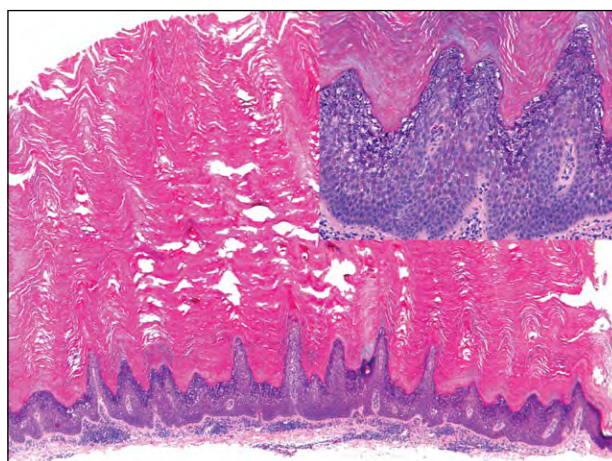


Figure 4. Hyperkeratosis and acanthosis (H&E, original magnification $\times 40$) with vacuolization and clumping of keratohyaline granules of epidermolytic acanthoma (H&E, original magnification $\times 200$ [inset]).

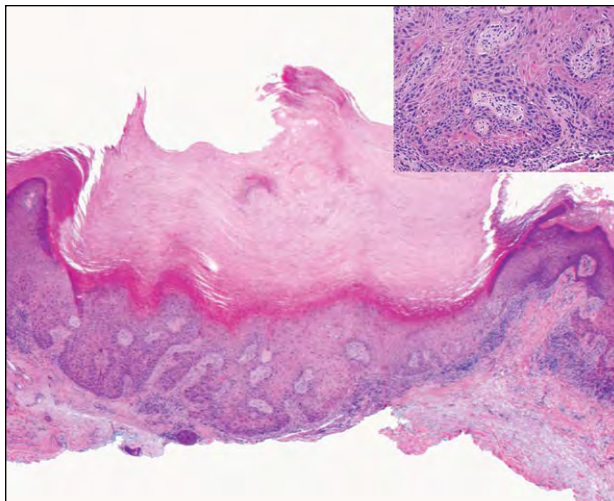


Figure 5. Hyperkeratosis, parakeratosis (H&E, original magnification $\times 40$), and full-thickness keratinocyte atypia of a squamous cell carcinoma in situ (H&E, original magnification $\times 200$ [inset]).

lamellae may flank a central, relatively hypokeratotic area that is histologically similar to CAH.

Both epidermolytic acanthoma and squamous cell carcinoma in situ present as solitary lesions that may exhibit pronounced hyperkeratosis, as is seen at the periphery of CAH lesions. However, epidermolytic acanthoma features vacuolization and clumping of keratohyaline granules in the superficial epidermis (epidermolytic hyperkeratosis) (Figure 4), which is not seen in CAH. Squamous cell carcinoma in situ often demonstrates prominent hyperkeratosis and parakeratosis associated with full-thickness nuclear atypia and

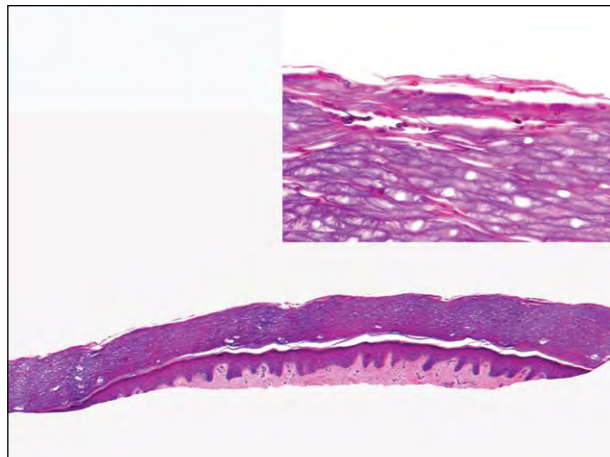


Figure 6. Acral skin demonstrating a thickened stratum corneum (H&E, original magnification $\times 40$) containing pigmented hyphae in the superficial layers (H&E, original magnification $\times 400$ [inset]), which is characteristic of tinea nigra.

disorganization of underlying keratinocytes (Figure 5). Tinea nigra is seen on the palms or soles and shows brown hyphal elements in the superficial layers of a compact hyperkeratotic stratum corneum (Figure 6).

REFERENCES

1. Berk DR, Böer A, Bauschard FD, et al. Circumscribed acral hypokeratosis [published online ahead of print April 6, 2007]. *J Am Acad Dermatol.* 2007;57:292-296.
2. Barry CI, Glusac EJ, Kashgarian M, et al. Circumscribed palmar hypokeratosis: two cases and a review of the literature. *J Cutan Pathol.* 2008;35:484-487.