

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

The best diagnosis is:

- a. Bowen disease
- b. clear cell acanthoma
- c. hidroacanthoma simplex
- d. psoriasis
- e. trichilemmoma

PLEASE TURN TO PAGE 77 FOR DERMATOPATHOLOGY DIAGNOSIS DISCUSSION

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The authors report no conflict of interest.

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Clear Cell Acanthoma

Clear cell acanthoma (CCA) was first described by Degos et al¹ in 1962. Also known as Degos acanthoma or pale cell acanthoma, CCA is an uncommon lesion most frequently found on the lower extremities of middle-aged adults and elderly patients. The median age of presentation is 63 years.² Clear cell acanthoma has not been shown to have any gender, racial, or ethnic preference.³ Although lesions typically are solitary, polyploid, multiple, and eruptive forms also have been described, as well as pigmented and giant variants.^{2,4} Clinically, CCA appears as an asymptomatic, red, shiny papule or nodule ranging in size from 5 to 20 mm (Figure 1 [inset]). The lesion may be covered by a thin crust and surrounded by a collarette of waferlike scale.⁵⁻⁷

Histopathologically, CCA has epidermal psoriasiform hyperplasia, elongation and fusion of rete ridges, and neutrophilic infiltration (Figure 2).^{2,4,6,8-10} The acanthotic epidermis consists of pale edematous cells. The clear keratinocytes stain strongly with periodic acid–Schiff and consist of multiple glycogen-rich and phosphorylase-deficient cytoplasmic vacuoles.^{2,8,10} There is a sharp border between the normal epidermis and CCA.^{2,4,6,8-10}

Parallels have been drawn between the histology of psoriasis (Figure 3) and CCA.^{6,9} Both demonstrate an acanthotic epidermis with a regular psoriasiform appearance, dilated capillaries, and neutrophilic infiltrate.⁶ Conserved adnexal elements set the CCA lesion apart.^{6,9} Clear cell acanthoma also may be distinguished by the presence of glycogen within the cytoplasm of keratinocytes, which gives the cells a pale appearance and stains red with periodic

acid–Schiff.¹¹ Clinically, a trichilemmoma is easy to differentiate from a CCA given its typical appearance as a smooth papule on the face, but histologically it can appear quite similar to a CCA with its clear cells and palisading edge (Figure 4). However, the histology of trichilemmoma generally reveals hyperkeratosis with a downward lobular growth of the epidermis, whereas CCA presents more frequently as a horizontal plaque. Bowen disease also may be included in the histologic differential with its demonstration of hyperkeratosis and occasional clear cells (Figure 5); however, the lack of cellular atypia in CCA distinguishes the diagnosis.¹⁰ Finally, the clear cell variant of hidroacanthoma simplex, an epidermal eccrine

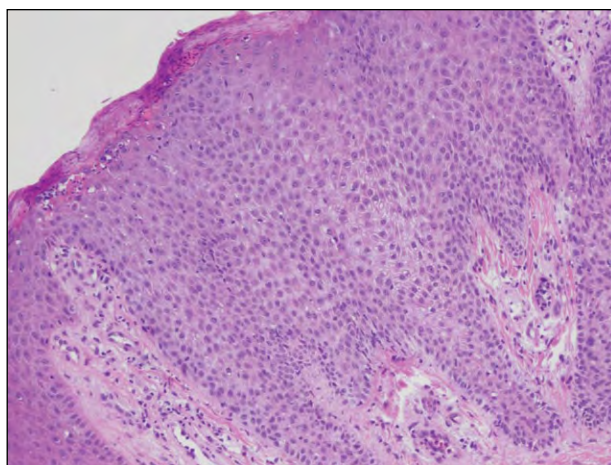


Figure 2. Clear cell acanthoma (H&E, original magnification $\times 100$).

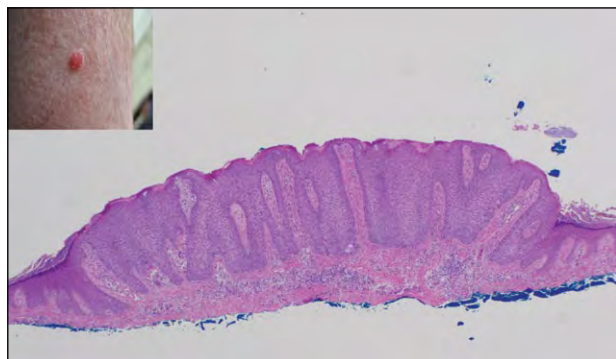


Figure 1. Clear cell acanthoma presenting on the left medial ankle of a 53-year-old man (inset). Histopathology revealed an acanthotic epidermis with clear cells (H&E, original magnification $\times 40$).

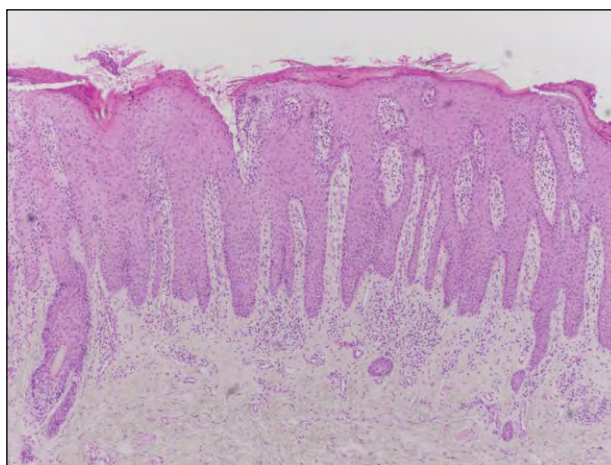


Figure 3. Psoriasis (H&E, original magnification $\times 40$).

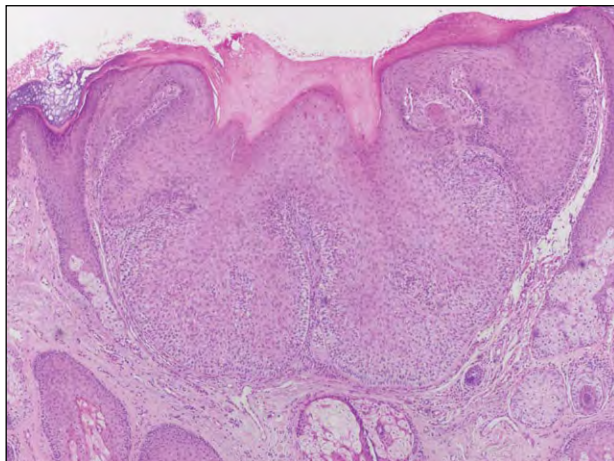


Figure 4. Trichilemmoma (H&E, original magnification ×40).

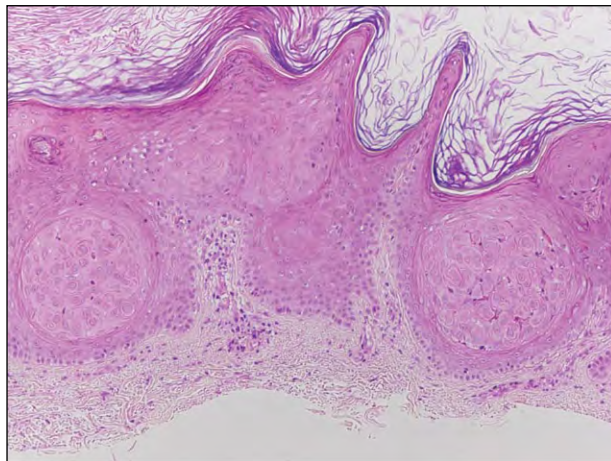


Figure 6. Hidroacanthoma simplex (H&E, original magnification ×40).

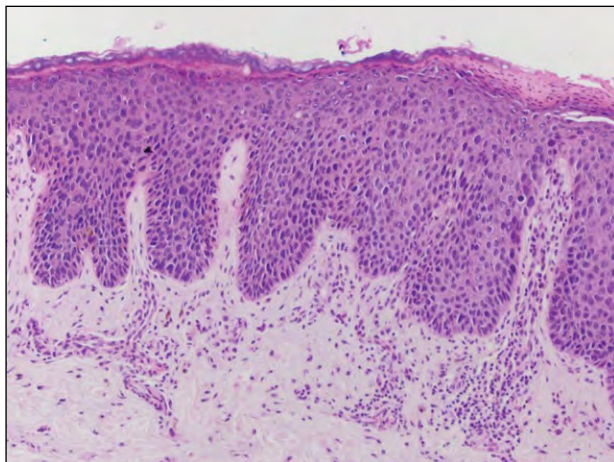


Figure 5. Bowen disease (H&E, original magnification ×40).

poroma, may bear similarities to CCA with bland acanthosis and proliferation of clear cells distinct from the surrounding epidermis, also appearing pale due to the presence of glycogen (Figure 6). Clear cell acanthomas can be distinguished by their lack of a nested configuration, which is classically seen in hidroacanthoma simplex.

The clinical differential diagnosis of CCA is broad, ranging from benign lesions such as irritated seborrheic keratosis, hemangioma, and pyogenic granulomas, to malignant neoplasms including basal cell carcinoma, Bowen disease, and amelanotic melanoma. Dermatoscopy may aid in the diagnosis of CCA. On examination with the dermoscope, the dilated capillaries on the surface of the lesion appear as multiple dots giving the appearance of pearls on a string.^{8,12,13} Although dotted capillaries also are typical of

psoriatic lesions when viewed dermatoscopically, vessels in CCA are arranged in a more linear fashion,⁶ and the vessels are in a homogeneous symmetrical array in the papillary dermis.^{2,6,12-14} These distinctive features allow for the possibility of earlier recognition of CCA via dermatoscopy.

Treatments of CCA traditionally have included surgical excision, electrofulguration, or curettage.¹⁵ Cryotherapy also is used but often requires multiple courses of treatment. Carbon dioxide laser therapy also has been used with success.⁴ For multiple CCAs, topical 5-fluorouracil also may be effective.¹⁵

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