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A case of podoplanin positive clear cell acanthoma

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To the Editor,

Clear cell acanthoma (CCA), also known as ’Degos acanthoma,’ is a solitary papule or nodule occurring on the lower legs of elderly individuals. Histopathologically, it shows psoriasiform epidermal hyperplasia with a pale plump cytoplasm and without nuclear atypia. Another histological specification of CCA is abundant glycogen in the cytoplasm, staining strongly with periodic-acid–Schiff (PAS). The other feature visible by a dermascope is characteristic vascular changes described as dotted vessels in a string-like arrangement; this could be a significant clue to the diagnosis of CCA. A 78-year-old man was referred to our department with a slowly growing nodule on his left thigh. No specific preceding trauma or insect bite was reported during the medical interview. Physical examination showed an asymptomatic smooth surfaced, dome-shaped, red-brown solitary nodule 11 mm in diameter on his left thigh (Fig. A). Observation with a dermascope demonstrated characteristic features of glomeruloid pattern vessels (Fig. B). Histologically, the epidermis showed psoriasiform acanthosis filled with non atypical clear epidermal cells (Fig. C and D). Epidermal collarette formation was also observed. Staining with PAS demonstrated strong positivity in the plump cytoplasm along with negative PAS-diastase stains (Fig. E). The etiology of CCA remains to be elucidated; a tumor-origin mechanism or a reactive response has been proposed. One of the reasons for viewing CCA as a

neoplasm is that there is a report on squamous cell carcinoma arising from a pre-existing CCA [1]. Strong and specific podoplanin staining in the epidermal lesion in our case indicates that CCA consists of cells with neoplastic features, which favor the aforementioned tumor-origin etiology, because podoplanin stains not only endothelial cells but also epithelioid mesothelioma, seminoma, and hemangioblastoma (Fig. F) [2]. Podoplanin also has some utility for differentiating cutaneous tumors because some primary cutaneous tumors, such as squamous cell carcinoma, cylindroma, and spiradenoma show diffuse positivity, but basal cell carcinoma is negative or only focally positive for podoplanin [3]. Furthermore, podoplanin is more specifically expressed in trichoepithelioma and can be used to differentiate it from basal cell carcinoma [4]. On the other hand, there is a report where some lesions of multiple CCA underwent self-healing, suggesting that CCA is caused by an immunological response concomitant with various inflammatory backgrounds [5]. Although the epidermal lesion was strongly stained by podoplanin, positive staining of alcian blue in the dermis underneath the epidermis also suggests mucin deposition following some immunological reaction (Fig. G and H). The staining profile of our case is unclear as to whether CCA is a neoplasm or a reactive response. Aside from the pathogenesis of CCA, a specific positivity of podoplanin and alcian blue for CCA as this case would be useful diagnostic modalities for differential diagnosis from various diseases

such as seborrheic keratosis, squamous cell carcinoma, eccrine poroma, and clear cell hidradenoma. A study including more cases is required to confirm whether podoplanin positivity in CCA is universally observed.

Figure Legends

Figure: (A) Clinical features of a clear cell acanthoma on the left thigh. A collarette of translucent scales is observed. (B) Dermaoscopic appearance. A glomeruloid vascular pattern is shown. (C) Features on hematoxylin and eosin staining. Psoriasiform acanthotic epidermis is observed. (D) High magnification. Strong staining with (E) PAS, (F) podoplanin, and (G)(H) alcian blue are shown.

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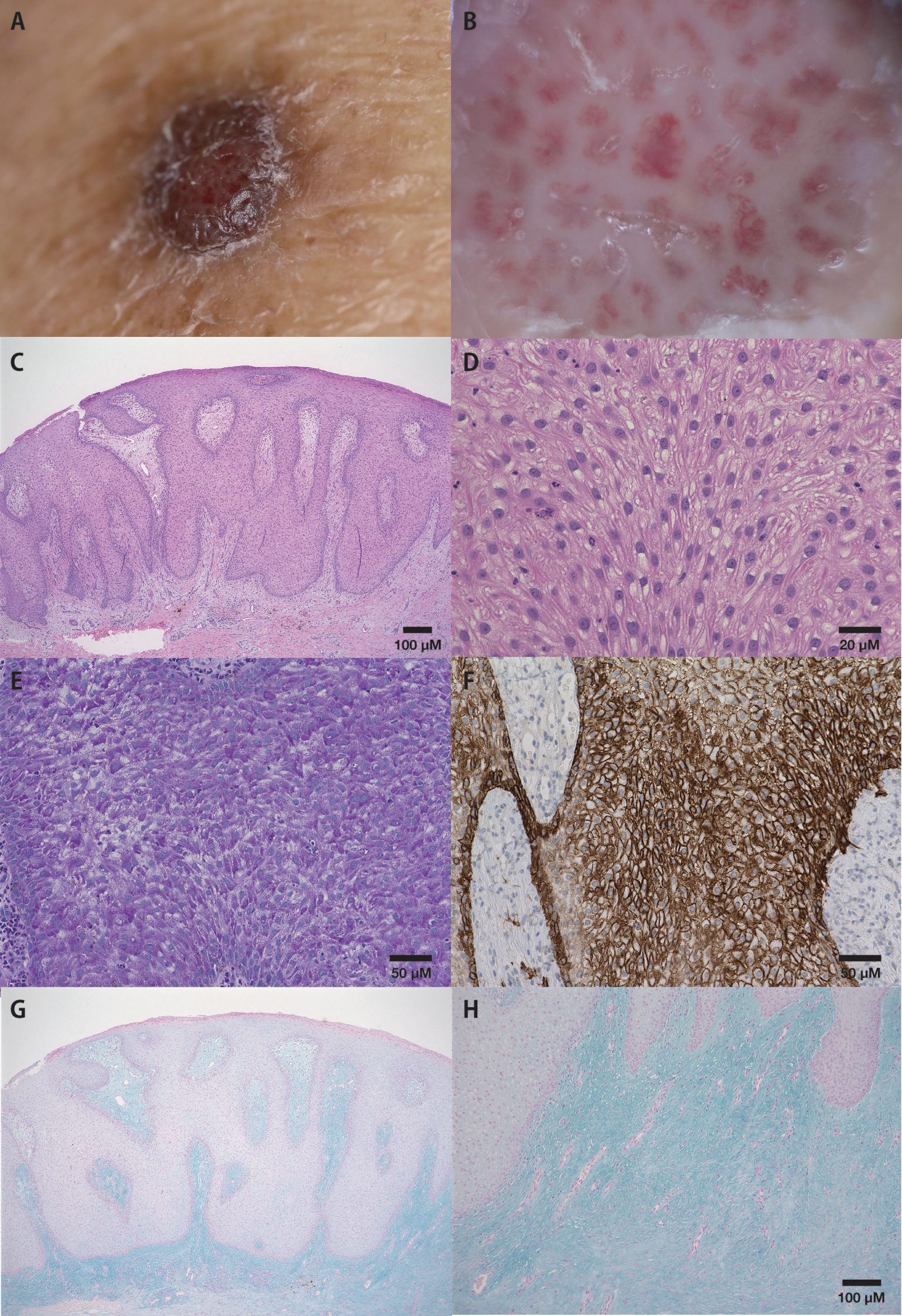
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