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QUIZ SECTION

Keratotic Nodule on The Heel: A Quiz

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A 51-year-old man, with a medical history of medullary thyroid carcinoma excised under thyroxine treatment presented with a painful enlarging lesion on his right heel since one year. A 3-cm diameter, greyish, infiltrated nodule with spicules was seen on physical examination (Fig. 1a). A 5-mm surgical excision was made and a total skin graft was used for reconstruction. Histopathology of the total resected tumour revealed pseudoepitheliomatous hyperplasic epidermis and a proliferation located between rete ridges, dermis and superficial hypodermis (Fig. 1b). The proliferation was composed of nets and cordons of cells with granular and abundant PAS-positive cytoplasm. Immunostains showed cytoplasmic positivity for s100 and inhibin (Fig. 1c). Three years later the patient is asymptomatic.

What is your diagnosis? See next page for answer.

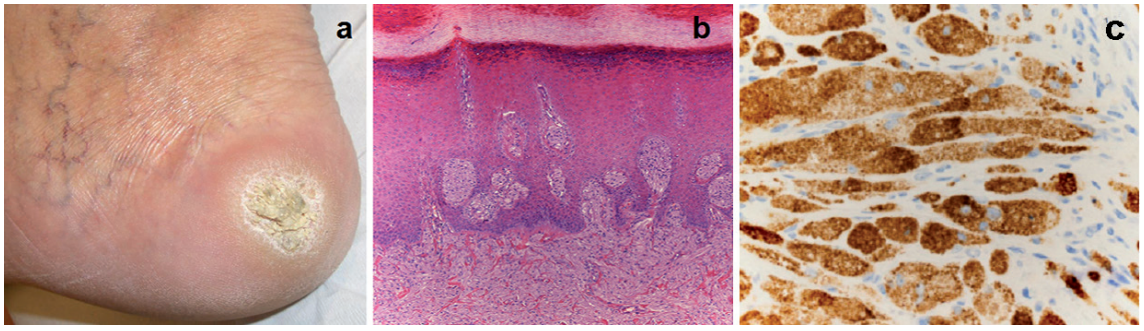

Fig. 1. (a) Infiltrated nodule with spicules. (b) Proliferation of cells with granular and abundant cytoplasm located between rete ridges and dermis, which induces pseudoepitheliomatous hyperplasia (hematoxilin and eosin, × 4 original magnification) (c) Immunostains showing cytoplasmic positivity for inhibin (× 40 original magnification).

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ANSWERS TO QUIZ

Keratotic Nodule on The Heel: A Comment

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***Diagnosis*: Granular cell tumour**

Granular cell tumour (GCT) is an infrequent neoplasm, usually located on the head and neck, with the tongue as the most frequent site. GCTs are also found in the internal organs, particularly in the upper aerodigestive tract. Heel localization is unusual (1, 2). The tumour is located in the dermis or subcutis and less frequently in the submucosa, smooth muscle, or striated muscle. It is a neural neoplasm that is thought to originate from Schwann cells. GCT is usually benign, and is more frequent in Afro-American women between the second and fourth decades of life (3). An asymptomatic solitary papule or nodule, red-brownish or skin-coloured, and slow growing, is the most frequent skin presentation (1–3). Size ranges between 0.5 and 3 cm (3). Multiple lesions have been found in 5–25% of cases (4). Familial presentations are associated in half of the patients with other anomalies, including nervous, cardiovascular, endocrine, and musculoskeletal anomalies (5–7). The main clinical differential diagnoses are dermatofibroma, adnexal tumours, cuniculatum carcinoma, amelanotic melanoma and common HPV planter warts (2). Histopathologically GCTs are characterized by broad cellular fascicles arranged in nets or sheets infiltrating the dermis (1–4). The tumour cells are large and polygonal, with a granular cytoplasm and small, round-to-oval nuclei. Immunostaining shows markers of neural (s-100 protein, neurone-specific enolase, peripheral nerve myelin proteins) and histiocytic (CD68) differentiation (2, 8). Also, inhibin, a characteristic granular cell marker, is positive in several GCTs (8). Localization in areas with plenty of peripheral nerves, such as tongue and heel (as in our case), is in agreement with the oncogenicity (9). Malignant GCTs occur in up to 1–2% of all cases, and are diagnosed if they meet 3 of the following criteria: necrosis, spindle cells, vesicular nuclei with large nucleoli, high nuclear: cytoplasmic ratio, high mitotic ratio, and pleomorphism (2). However, some authors believe that metastasis is the only unequivocal marker of malignancy (10). GCT must be distinguished from basal cell carcinoma, atypical fibroxanthoma, dermatofibroma, dermatomyofibroma, dermatofibrosarcoma protuberans, rhabdomyoma, leiomyoma, ameloblastoma, angio and leio skin sarcomas, and melanocytic proliferations, which may also display areas of granular cell morphology in rare cases (11). Radical surgical excision remains the mainstay of treatment (1). In 2–15% of cases local recurrences occur, but only 1–3% are malignant (2). Radiation and chemotherapy are not needed to treat benign GCT lesions and are not effective for malignant lesions (2).

REFERENCES

1. Chilukuri S, Ray Peterson S, Goldberg L. Granular cell tumor of the heel treated with Mohs Technique. Dermatol Surg 2004; 30: 1046–1049.
2. López V, Santonja N, Jordá E. Granular cell tumor on the sole of a child: a case report. Pediatr Dermatol 2011; 28: 473–474.
3. Tamborini F, Cherubino M, Scamoni A, Valdatta LA. Granular cell tumor of the toe: a case report. Dermatol Res Pract 2010 Article ID 184125.
4. Hatta J, Yanagihara M, Hasei M, Abe S, Tanabe H, Mochizuki T. Case of multiple cutaneous granular cell tumors. J Dermatol 2009; 36: 504–507.
5. Schrader KA, Nelson TN, De Luca A, Huntsman DG, McGillivray BC. Multiple cutaneous granular cell tumors are an associated feature of LEOPARD syndrome caused by mutation in PTPN11. Clin Genet 2009; 75: 185–189.
6. Seiter S, Ugurel S, Tilgen W, Reinhold U. Multiple granular cell tumors and growth hormone deficiency in a child. Pediatr Dermatol 1999; 16: 308–310.
7. Ramaswamy PV, Storm CA, Filiano JJ, Dinulos JG. Multiples granular cell tumors in a child with Noonan syndrome. Pediatr Dermatol 2010; 27: 209–211.
8. Rekhi B, Jambhekar NA. Morphologic spectrum, immunohidtochemical analysis, and clinical features of a series of granular cell tumors of soft tissues: a study for a tertiary referral cancer center. Ann Diagn Pathol 2010; 14: 162–167.
9. Ordoñez NG, Mackay B. Granular cell tumor: a review of the pathology and histogenesis. Ultrastruct Pathol 1999; 23: 207.
10. Fanburg-Smith JC, Meis-Kindblom, JM, Fante R, Kindblom L-G. Malignant granular cell tumor of the soft tissue: diagnostic criteria and clinicopathologic correlation. Am J Surg Pathol 1998; 22: 779–794.
11. Lewin MR, Montgomery EA, Barrett TL. New or unusual dermatopathology tumors: a review. J Cutan Pathol 2011; 38: 689–696.