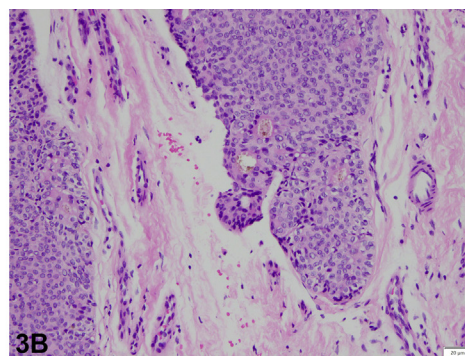
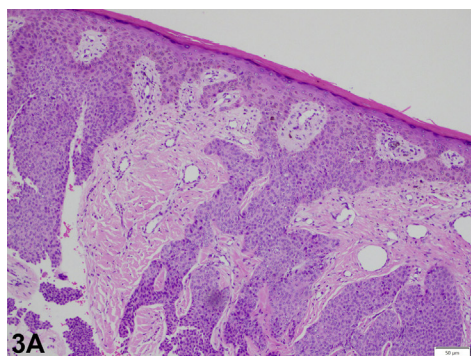
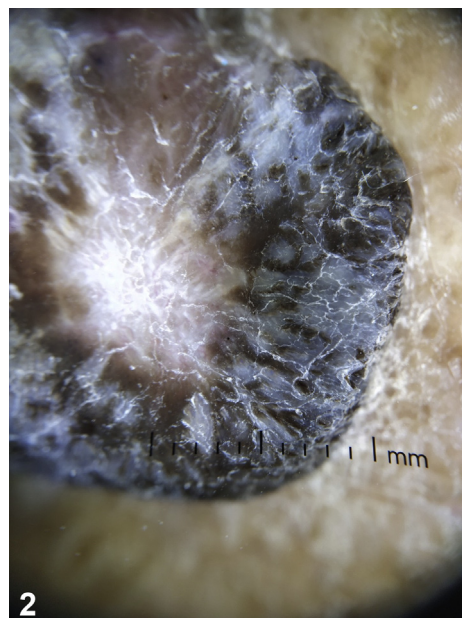


Pigmented nodule on the dorsum of the foot



Lester Juay, MBBS (Hons), MRCP, MMed Int Med,^a Ellie Choi, MBBS, MRCP, MMed Int Med,^a Justin Wong, MBBS, MRCP, FRCPath,^b and Nisha Suyien Chandran, MRCP, MMed, MBBS^a
Singapore

Key words: adnexal tumor; pigmented; poroma.



From the Division of Dermatology^a and Department of Pathology, National University Hospital.^b

Funding sources: None.

Correspondence to: Lester Juay, MBBS (Hons), MRCP, MMed Int Med, National University Hospital, 5 Lower Kent Ridge Road, Singapore 119074. E-mail: lester_juay@nuhs.edu.sg.

JAAD Case Reports 2021;13:49-51.

2352-5126

© 2021 by the American Academy of Dermatology, Inc. Published by Elsevier, Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

<https://doi.org/10.1016/j.jidcr.2021.05.003>

A 76-year-old Asian man was seen as an inpatient dermatologic referral for a pigmented nodule presenting over the dorsum of the left foot. He reported a 20-year history of a slowly expanding lump, which was otherwise asymptomatic. On examination, there was a soft, pigmented, fleshy, nonulcerated nodule attached to the dorsum of the left foot (Figs 1 and 2). The nodule was nontender. Regional lymph nodes were not palpable. A punch biopsy of the nodule revealed an epidermal proliferation consisting of anastomosing cords of basaloid small polygonal cells with ductal structures (Fig 3, A and B).

Question 1: What is the most likely diagnosis?

- A. Nodular melanoma
- B. Basal cell carcinoma
- C. Intradermal melanocytic nevus
- D. Pigmented poroma
- E. Pigmented seborrheic keratosis

Answers:

A. Nodular melanoma – Incorrect. This man reported a history of a slowly-growing lump over 2 decades, which is inconsistent with the natural history of melanomas. The histology of a melanoma should show atypical melanocytes without maturation, with frequent mitoses and possible lymphovascular invasion.

B. Basal cell carcinoma – Incorrect. While basal cell carcinomas are often pigmented in the Asian population, histology would reveal a basaloid proliferation of tumor cells, demonstrating peripheral palisading and retraction clefting, within a fibromyxoid stroma.

C. Intradermal melanocytic nevus – Incorrect. The histology of an intradermal melanocytic nevus should show nests and cords of melanocytes within the papillary dermis, extending deeper, and demonstrating maturation with descent.

D. Pigmented poroma – Correct. Poromas are benign adnexal tumors arising from the acrosyringium (intraepidermal portion) of the eccrine sweat duct. Dermoscopic features of poromas include white interlacing areas around vessels, milky-red globules, and poorly-visualized vessels. The classic findings of cells containing ample pink cytoplasm, with small, round-to-oval nuclei, dispersed chromatin, and small nucleoli should cue one in to the diagnosis of a poroma. In this case, pigment was observed within the ductal structures of the poroma. The pigmented variant of poroma is more commonly seen in the nonwhite population, on nonacral sites.¹

E. Pigmented seborrheic keratosis – Incorrect. While seborrheic keratoses tend to be pigmented in the Asian skin, with their histology showing a

basaloid proliferation, the presence of ductal structures on histology would argue against the diagnosis of a seborrheic keratosis. Pseudohorn cysts were absent in this specimen.

Question 2: Which histologic stain would be positive on this specimen?

- A. Melan-A
- B. Ber-EP4
- C. Alcian blue
- D. Carcinoembryonic antigen
- E. Sox10

Answers:

A. Melan-A – Incorrect. The melan-A stain, also known as the MART-1 stain, is positive in melanocytes but typically negative in tumors of epithelial or mesenchymal derivation.

B. Ber-EP4 – Incorrect. The Ber-EP4 stain is a monoclonal antibody directed toward epithelial-glycoprotein-adhesion-molecules and is highly sensitive and specific for basal cell carcinoma.²

C. Alcian blue – Incorrect. Alcian blue stains acid mucopolysaccharides, which are not found in poromas. Poroid cells may appear to have a faint pink cytoplasm, which reflects glycogen accumulation.

D. Carcinoembryonic antigen – Correct. Carcinoembryonic antigen stains the ducts of sweat glands and its neoplasms. It is also usually positive when used on adenocarcinomas.

E. Sox10 – Incorrect. Sox10 is a neural crest transcription factor, which stains melanomas, myoepitheliomas, and some malignant peripheral nerve sheath tumors.

Question 3: Which of the following has been described in association with the development of poromas?

- A. Radiation exposure
- B. Basal cell carcinoma
- C. Nevus comedonicus

- D. CYLD gene mutation
- E. Adolescence

Answers:

A. Radiation exposure — Correct. There are reports of development of poromas following long-term radiation exposure.³ A case published in 1989 involved a 70-year-old man developing 7 poromas over his previous irradiated right lower limb over a span of 37 years.⁴

B. Basal cell carcinoma — Incorrect. Poromas have been found to occur in patients with hypohidrotic ectodermal dysplasia and Bowen disease⁵; however, an association with basal cell carcinomas remains to be established.

C. Nevus comedonicus — Incorrect. The poroma has been found as a secondary tumor on a nevus sebaceous.³ There has been no known association between the poroma and nevus comedonicus.

D. CYLD gene mutation — Incorrect. Mutations in the CYLD lysine 63 deubiquitinase (CYLD) gene have been implicated in Brooke-Spiegler syndrome, which is associated with multiple adnexal tumors

such as trichoepitheliomas, cylindromas, and spiradenomas. CYLD gene mutation has not been identified in poroma formation.³

E. Adolescence — Incorrect. Poromas tend to occur in the middle-aged-to-elderly populations.

Conflicts of interest

None declared.

REFERENCES

1. Hu SCS, Chen GS, Wu CS, Chai CY, Chen WT, Lan CCE. Pigmented eccrine poromas: expression of melanocyte stimulating cytokines by tumor cells does not always result in melanocytic colonization. *J Eur Acad Dermatol Venereol.* 2008;22(3):303-310.
2. Sunjaya AP, Sunjaya AF, Tan ST. The use of BEREPA immunohistochemistry staining for detection of basal cell carcinoma. *J Skin Cancer.* 2017;2692604.
3. Sawaya JL, Khachemoune A. Poroma: a review of eccrine, apocrine, and malignant forms. *Int J Dermatol.* 2014;53(9):1053-1061.
4. Ullah K, Pichler E, Fritsch P. Multiple eccrine poromas arising in chronic radiation dermatitis. *Acta Derm Venereol.* 1989;69(1):70-73.
5. Shalom A, Schein O, Landi C, Marghoob A, Carlos B, Scope A. Dermoscopic findings in biopsy-proven poromas. *Dermatol Surg.* 2012;38(7 Pt 1):1091-1096.