DERMATOLOGY PRACTICAL & CONCEPTUAL
www.derm101.com

Pigmented eccrine poroma: dermoscopic and confocal features

Caterina Bombonato[1], Simonetta Piana[2], Elvira Moscarella[3], Aimillios Lallas[4], Giuseppe Argenziano[5], Caterina Longo[3]

1 Dermatology Unit, University of Modena and Reggio Emilia, Italy
2 Pathology Unit, Arcispedale S. Maria Nuova, IRCCS, Reggio Emilia, Italy
3 Dermatology and Skin Cancer Unit, Arcispedale S. Maria Nuova, IRCCS, Reggio Emilia, Italy
4 First Department of Dermatology, Aristotle University, Thessaloniki, Greece
5 Dermatology Unit, Second University of Naples, Naples, Italy

Citation: Bombonato C, Piana S, Moscarella E, Lallas A, Argenziano G, Longo C. Pigmented eccrine poroma: dermoscopic and confocal features. Dermatol Pract Concept 2016;6(3):12. doi: 10.5826/dpc.0603a12

Received: April 23, 2016; **Accepted:** May 27, 2016; **Published:** July 31, 2016

Funding: None.

Competing interests: The authors have no conflicts of interest to disclose.

All authors have contributed significantly to this publication.

Corresponding author: Caterina Longo, MD, PhD, Dermatology and Skin Cancer Unit, Arcispedale Santa Maria Nuova-IRCCS, Viale Risorgimento, 80, 42100 Reggio Emilia, Italy. Tel. +390522295612; Fax. +390594224271. Email: longo.caterina@gmail.com

ABSTRACT

Eccrine poroma is a rare benign adnexal tumor of epithelial cells originating from the terminal ductal portion of the sweat glands that is typically located on palms and soles, although other cutaneous sites can be affected [1]. It is usually nonpigmented even if there is a pigmented variant that corresponds to 17% of cases and it is usually underdiagnosed, since it is mistakenly confused with other pigmented tumors [2,3]. Dermoscopy and reflectance confocal microscopy (RCM) may assist in the correct diagnosis of this tumor.

Herein, we report one case of pigmented eccrine poroma (PEP) that simulated clinically a cutaneous melanoma or a basal cell carcinoma. Dermoscopy and RCM excluded the possibilities of those two diagnoses; the overall confocal findings were suggestive for a benign epithelial tumor. Histology was fundamental to diagnose this lesion as a pigmented eccrine poroma. Even if the diagnosis of eccrine poroma remains histopathological still, as in this case report, noninvasive tools such as dermoscopy and RCM examinations can be of help to rule out the diagnosis of melanoma. Larger studies on this rare pigmented variant of eccrine poroma could shed new light on the identification of specific diagnostic dermoscopic and confocal features.

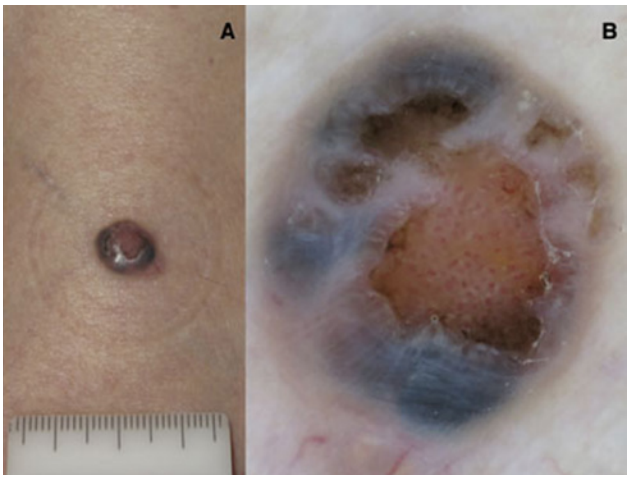

Figure 1. Clinical presentation of the nodule on the posterior part of the tight (A); dermoscopy reveals blue-white structures at the periphery, erosions and polymorphous vessels in the center (polarized dermoscopy 10X)(B). [Copyright: ©2016 Bombonato et al.]

Case presentation

A 74-year-old woman, with a firm, slow-growing, variably pigmented nodule on her thigh was referred to our Unit. The lesion was elevated at the periphery and partially ulcerated, well delimited and asymptomatic (Figure 1A). Dermoscopy showed asymmetry, white-blue color at the periphery and polymorphous vessels in the center associated with crystalline structures and multiple erosions (Figure 1B). Differential diagnosis included pigmented basal cell carcinoma, melanoma and benign epithelial neoplasms.

Analysis of RCM images revealed a well-demarcated tumor (Figure 2A) composed of dark homogeneous islands surrounded by bright stroma (Figure 2B). Tumor cells were small and uniform in size and shape and vessels were well represented (Figure 2C). The RCM features were not indicative of basal cell carcinoma because of the lack of palisading, clefting and typical shape of tumor nests. Furthermore, no melanocytic proliferation was detected upon RCM and thus a diagnosis of melanoma was excluded.

Histologic examination, at scanning view, showed a well-circumscribed lesion with a pattern of growth in broad anastomosing bands (Figure 3A). The overlying epidermis was hyperkeratotic (Figure 3B). At higher magnification, it was composed of monomorphous cuboidal cells with features of poroid maturation into small ductal lumina (blue arrows) and containing variably sized melanin granules (arrows) (Figure 3C-D). Atypical mitoses, cytologic atypia or other features suggestive of malignant transformation were not seen. A diagnosis of pigmented eccrine poroma was rendered.

Discussion

Pinkus first described eccrine poroma in 1956 [4]. This benign adnexal neoplasm often appears as a firm, flesh-colored to reddish nodule, papule or plaque, at the acral sites, which are the sites with higher concentration of eccrine sweat glands. It is more frequent between the fourth and sixth decades of life [5] without sex predilection. Its pathogenesis is unknown, but may be related to trauma, radiation or scars [2]. They are usually nonpigmented even if the pigmented variant can be occasionally found [6]. This variant seems to be more frequent in non-white people and on non-acral sites. Frequently it is confused clinically with seborrheic keratosis, epithelialized pyogenic granuloma, basal cell carcinoma (BCC), squamous cell carcinoma (SCC), angiofibroma, and cutaneous melanoma.

For these reasons it can be regarded as "big simulator," and thus diagnostic tools can be of help in differentiating eccrine poroma from other entities.

Dermoscopy of this tumor has been partially depicted. Ferrari et al. [7] summarized dermoscopic structures in a series of non-pigmented poroma in which the main dermoscopic clues were: a white-to-pink halo surrounding the vessels, pink-white structureless areas, vascular structures of

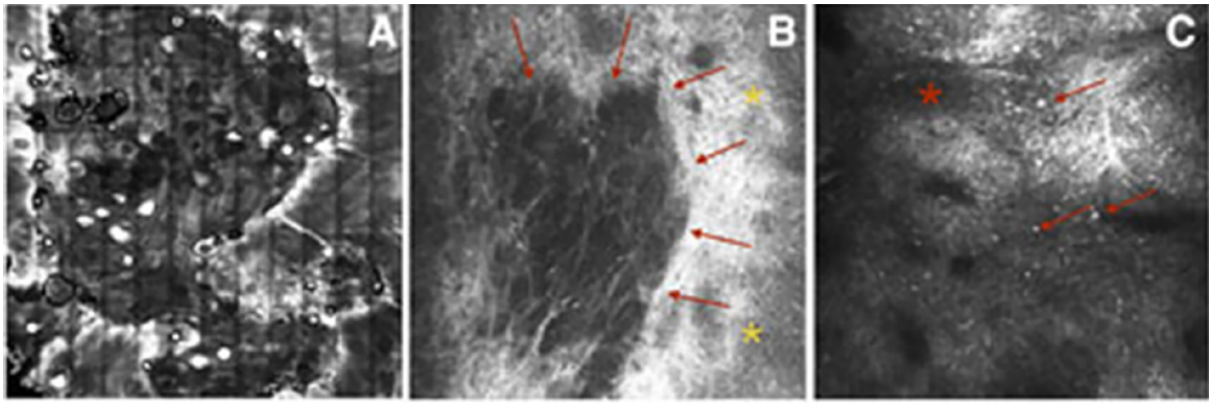

Figure 2. Confocal microscopy shows a well-demarcated tumor (A) characterized by dark homogeneous island (red arrows) surrounded by a bright stroma (yellow asterisk) (B); small cells (arrows) and vessels (red asterisk) (C). [Copyright: ©2016 Bombonato et al.]

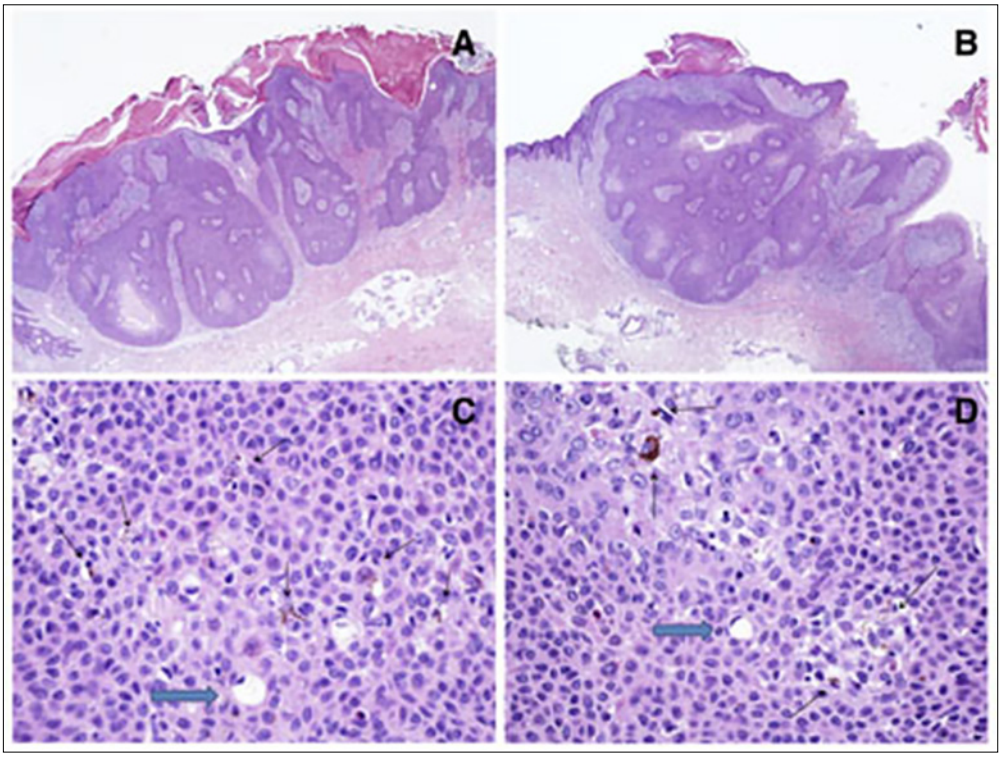

Figure 3. Histology reveals a well-demarcated tumor growing in large nests and covered by hyperkeratotic epidermis (A-B, HE 40X). It is composed of monomorphous cuboidal cells with features of poroid maturation into small ductal lumina (blue arrows) and containing variably sized melanin granules (black arrows) (C-D, HE 200X). [Copyright: ©2016 Bombonato et al.]

glomerular and linear irregular vessels, hairpin vessels, and linear irregular vessels.

Minagawa et al. [3] valuated PEP, describing 12 cases in which vascular structures, globule-like structures and comedo-like openings were the hallmarks. More recently, it has been shown that eccrine poroma might mimic several benign and malignant tumors also from a dermoscopic aspect [8].

Additional to the use of dermoscopy, reflectance confocal microscopy is currently used to increase diagnostic accuracy of skin tumors [9,10,11] since it provides skin imaging in vivo at cellular level resolution close to conventional histology. In the current case, RCM highlighted the presence of tumor nests with clearly visible outline, small sized tumor cells and overall symmetric silhouette. Although the diagnosis of pigmented eccrine poroma was not possible since diagnostic RCM criteria have been not previously identified, the findings were not suggestive of BCC or melanoma: furthermore, the overall analysis of the architecture and cytology suggested the diagnosis of an epithelial benign lesion.

Routinely the diagnosis of eccrine poroma is made by histopathology. On histology basaloid cells growing in nests and solid nodules are, by definition, characterized by more or less evident poroid differentiation, that is, small ductal lumina bordered by an eosinophilic cuticle. Poroid differentiation occurs also in other entities such as hydroacanthoma simplex, dermal ductal tumor and poroid hidradenoma. Benign tumors arising from the eccrine ducts often are difficult to differentiate from an eccrine poroma [12].

Even if the diagnosis of eccrine poroma remains histopathological still, as in this case report, noninvasive tools such as dermoscopy and RCM examinations can be of help to rule out the diagnosis of melanoma and non-melanoma skin cancers. Larger studies on this rare pigmented variant of eccrine poroma could shed new light on the identification of specific diagnostic dermoscopic and confocal features.

References

1. Betti R, Bombonato C, Cerri A, et al. Clinically and/or histologically pigmented poromas in Caucasian patients. G Ital Dermatol Venereol 2014;149:341-6. PMID: 24819762.
2. Avilés-Izquierdo JA, Velàzquez-Tarjuelo D, Lecona-Echevarria M et al. Dermoscopic features of eccrine poroma. Acta Dermosifiliogr 2009;100(2):133-6. PMID: 19445878.
3. Minagawa A, Koga H. Dermoscopy of pigmented poromas. Dermatology. 2010;221:78-83. PMID: 20516657. DOI: 10.1159/000305435.
4. Goldman P, Pinkus H, Rogin JR. Eccrine poroma, tumors exhibiting features of the epidermal sweat duct unit. AMA Arch Derm 1956;74(5):511-21. PMID: 13361538.
5. Abenoza P, Ackerman AB. *Ackerman's Histologic Diagnosis of Neoplastic Skin Diseases*. Philadelphia: Lea and Febiger, 1990;113-85.
6. Hu SC, Chen GS, Wu GS et al. Pigmented eccrine poromas: expression of melanocyte stimulating cytokines by tumor cells

does not always result in melanocytic colonization. J Eur Acad Dermatol Venereol 2008;22:303-10. PMID: 18269598. DOI: 10.1111/j.1468-3083.2007.02406.x.
7. Ferrari A, Buccini P, Silipo V, et al. Eccrine poroma: a clinical-dermoscopic study of seven cases. Acta Derm Venereol 2009;89:160-4. PMID: 19326001. DOI: 10.2340/00015555-0608.
8. Lallas A, Chellini PR, Guimaraes MG, et al. Eccrine poroma: the great dermoscopic imitator. J Eur Acad Dermatol Venereol 2015 Aug 31. Epub ahead of print. PMID: 26333195. DOI: 10.1111/jdv.13302.
9. Scope A, Selinger L, Oliviero M, et al. Precise longitudinal tracking of microscopic structures in melanocytic nevi using reflectance confocal microscopy: a feasibility study. JAMA Dermatol 2016;152(3):299-304. PMID: 26746569. DOI: 10.1001/jamadermatol.2015.4993.
10. Longo C, Lallas A, Kyrgidis A, et al. Classifying distinct basal cell carcinoma subtype by means of dermatoscopy and reflectance confocal microscopy. J Am Acad Dermatol 2014;71(4):716-24.
11. Pellacani G, Pepe P, Casari A et al. Reflectance confocal microscopy as a second-level examination in skin oncology improves diagnostic accuracy and saves unnecessary excisions: a longitudinal prospective study. Br J Dermatol 2014;171(5)1044-51. PMID: 24928707. DOI: 10.1016/j.jaad.2014.04.067.
12. Battistella M, Langbein L, Peltre Band Cribier B. From hidroacanthoma simplex to poroid hidroadenoma: clinicopathologic and immunohistochemic study of poroid neoplasm and reappraisal of their histogenesis. Am J Dermatopathol 2010;32:459-68. PMID: 20571345. DOI: 10.1097/DAD.0b013e3181bc91ff.