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Eccrine poroma: The prominent mimicker

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Case Report

Eccrine poroma: The prominent mimicker

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Abstract

Background: Eccrine poroma (EP) is an adnexal benign tumor arising from the eccrine duct epithelium. The appearance of EP can mimic benign and malignant skin tumors, thus often making the diagnosis delayed or inaccurate.

Case Illustration: We report two cases of EP, with clinical and dermoscopic features mimicking Bowen's disease, verruca vulgaris, pyogenic granuloma, skin metastases of breast cancer, and amelanotic melanoma. Both patients were surgically excised and biopsied. Histopathology examination of both cases revealed eccrine poroma.

Discussion: Both cases showed similarity with the theories, that EP is most found in middle age population and its predilection on extremities. The dermoscopy appearance of the first patient showed two major components, multiple red dots and lacunae mimicking glomerular vessels, and multiple whitish halos-like-keratosis. Red dots with whitish halos can be seen in dermoscopy of verruca vulgaris, while glomerular vessels and keratosis is usually found in Bowen's disease. The dermoscopy examination of our second patient only showed some loop hemorrhagic and thrombosed vessels, which are quite inconclusive. Diagnoses were made with histopathology examination which revealed similar pattern of eccrine poroma in both cases.

Conclusion: EP is a prominent mimicker, often misdiagnosed because it is uncommon in clinical practice, has variable clinical presentations and dermoscopic appearances. Hence, recognizing and diagnosing this disease becomes a challenge for dermatologist.

Keywords: *adnexal tumor, dermoscopy, eccrine poroma*

Background

Eccrine poroma (EP) represents 10% of all sweat gland tumors.¹⁻⁵ It is most found in middle-aged and elderly, predominantly at the distal extremities such as soles, palms, and fingers.^{1,2,6-8} EP is usually asymptomatic, but could be mildly painful or itchy.^{1,2} Histopathology is imperative to confirm the diagnosis of EP.³ Complete excision is the treatment of choice.¹

We report two cases of EP with clinical and dermoscopic appearances. Dermatologists should be able to recognize and diagnose this entity.

Case Illustration

A 38-year-old man presented with a pale erythematous tumor which was consistently enlarging since one year on his 4th right toe (Figure 1A). He felt mild pain upon pressure, without a history of bleeding from the lesion. Other medical history was insignificant. He tried several treatments, from topical medication to injections, but there was no improvement. On dermoscopy, there were multiple red dots or lacunae mimicking glomerular vessels, and multiple whitish halos-like-keratosis (Figure 1B).

Our differential diagnosis was Bowen's disease and verruca vulgaris. The tumor was surgically excised, and histology revealed a large tumor mass arising from the epidermis extending into

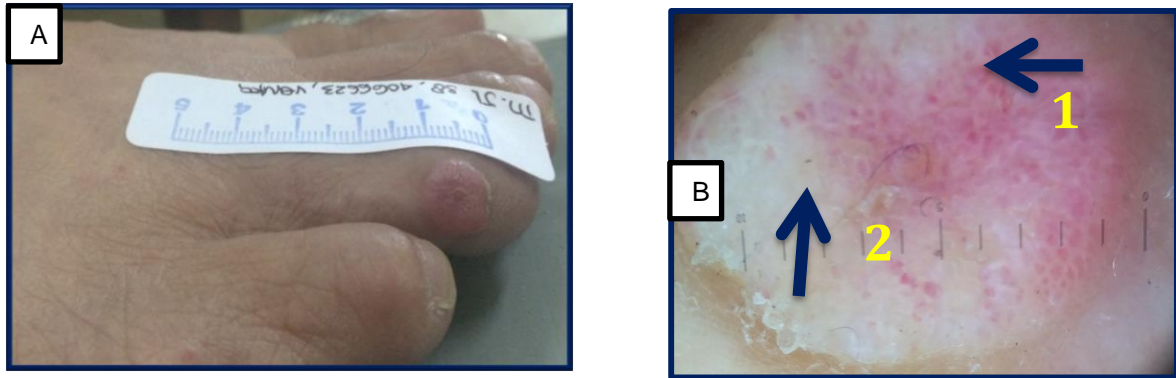


Figure 1. A. Clinical image of a solitary, moist, pale erythematous tumor, 1,1 x 0,8 x 0,3 cm in size, with mild pain upon pressure on the 4th right toe **B.** Dermoscopic image of multiple red dots or lacunae mimicking glomerular vessels (arrow 1); multiple whitish halos-like keratosis (arrow 2)

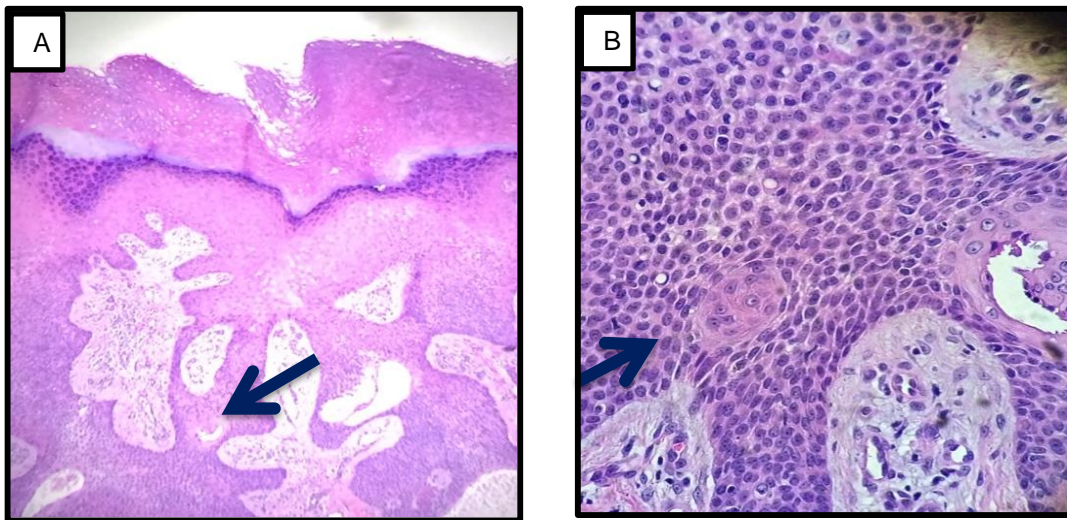


Figure 2. A. Irregular epidermal hyperplasia & acanthosis (H&E, x40) **B.** Ductal differentiation of cuboid cells (H&E, x100)

the dermis as broad anastomosing bands of tumor cells (Figure 2A and B). The tumor was composed of abundant, uniform, small cells with round nucleus, fine chromatin, and eosinophilic cytoplasm. There are plenty of capillaries with endothelial edema and chronic inflammatory cells in the dermis. Based on these findings, the diagnosis of eccrine poroma was made.

The second case was a 44-year-old woman presented with two painless dark and reddish tumors on her left upper extremity since 1.5 years. There was one dull hyperpigmented pedunculated papule on her inner upper left arm, and one

erythematous pedunculated papule on the back of her left hand (Figure 3A). She had a history of recurrent breast cancer and had undergone surgery, chemotherapy, and radiotherapy. She first recognized a small red tumor on her upper inner arm that became darker and scaly, followed by a similar tumor on the back of her left hand. She self-medicated with over the counter cream, but the tumors were getting more red, bigger, and chafed. Dermoscopy showed loop hemorrhagic and thrombosed vessels (Figure 3B). Our differential diagnoses included pyogenic granuloma, verruca vulgaris, skin metastases of breast cancer, and amelanotic melanoma.

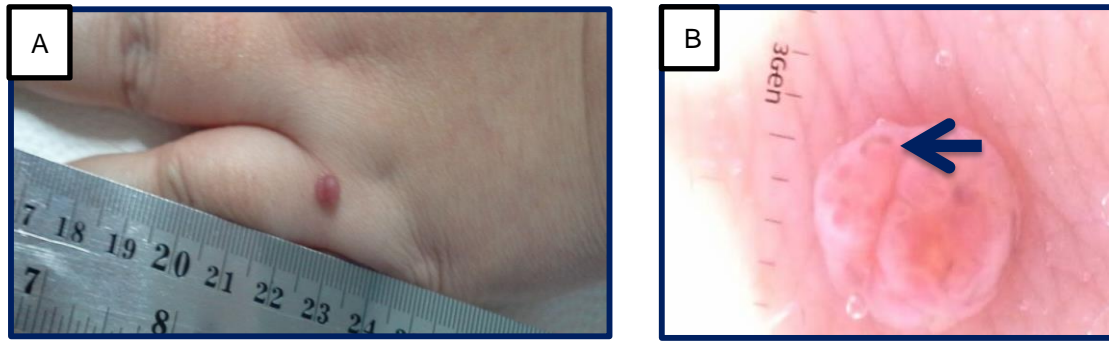


Figure 3. A. Clinical image of a solitary erythematous pedunculated papule on the back of left hand **B.** Dermoscopic image of loop hemorrhages and thrombosed vessels

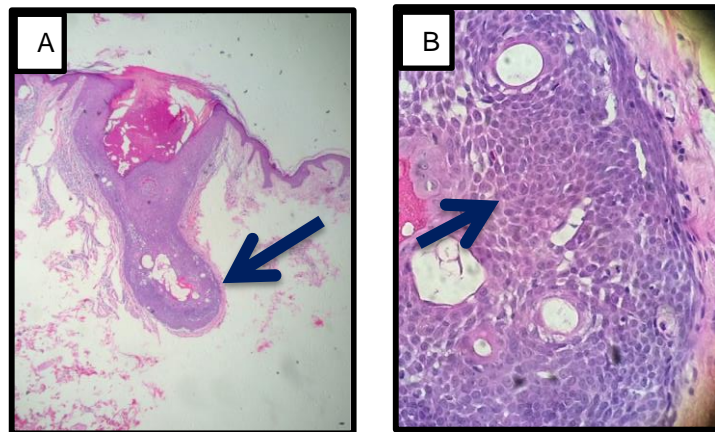


Figure 4. A. Tumor extending from epidermis into the dermis (H&E, x40). **B.** Cuboid cells showing differentiation into ductal structures (H&E, x100)

Both tumors were excised, and histology showed abundant of cuboid cells with clear and pale cytoplasm, extending from epidermis into the dermis (Figure 4A). There were dilatation of eccrine ducts, filled with keratin plug, and differentiation of cuboid cells to eccrine ductal structure (Figure 4B). Broad anastomosing bands of elongated rete were also seen. There were plenty of chronic inflammatory cells on perivascular and perieccrine. These appearances are highly suggestive for a eccrine poroma.

Discussion

Eccrine poroma (EP) belongs to the group of adnexal tumors, first reported by Pinkus and Goldman in 1956.¹⁻³ The precise prevalence of EP has not been reported, however it is believed to be representing 10% of sweat gland tumors.^{1,3-5} It is unknown if any racial, ethnic, sex, nor age predilection exist, but is typically found in middle-

aged and elderly.⁶⁻⁸ Both described patients were in their middle age, and the predilection of their tumor locations was consistent with the theory, which was on their extremities. Our first patient felt mild pain upon pressure, whereas our second patient felt no pain or itch. EP is thought to be associated with scarring, trauma, X-ray radiation, and human papilloma virus infection.² Based on the location and history, we thought that the risk factor of our patients is trauma, in addition to radiation for the second patient.

EP is a relatively a slow growing lesion that may manifest as a solitary, moist, exophytic bright red to flesh-colored, white, or blue, sessile or pedunculated, dome-shaped papule, nodule, or plaque.¹⁻⁵ It may have a smooth or verrucous surface, and it may be ulcerative.¹ Because of this clinical variability, EP is very difficult to recognize. Both of our patients have different clinical appearances. The first patient had solitary, moist,

pale erythematous tumor, while the second patient had pedunculated papules. Clinically, we diagnosed our first patient as Bowen's disease with differential diagnosis verruca vulgaris. Whereas the papules on our second patient appear like pyogenic granuloma and verruca vulgaris. Since the second patient also had a history of breast cancer, we thought skin cancer metastases as one of the differential diagnoses. We also still cannot exclude the possibility of amelanotic melanoma in both patients.

Although there are many dermoscopic patterns described in EP, dermoscopy can be very helpful. The key feature is its vascular pattern, which may be polymorphous.⁵ Also glomerular, linear irregular, leaf and flower-like, and looped or hairpin variants vessels, surrounded by a white, ivory to pink halo can be observed.^{1,5,7} The leaf and flower-like vascular pattern is believed to be relatively unique to EP,^{1,7} however, we did not see it on our patients. Glomerular vessels, which may mimic Bowen's disease, are usually seen in EP.¹⁰ Reddish-white globule-like structures also occasionally found, can be very similar to the red lacunae of vascular lesions, for example, pyogenic granuloma or hemangioma. Milky-red areas, commonly found in melanoma, may also be present.^{5,11} Arborizing vessels as seen in basal cell carcinoma, are also described in variants of EP.¹² Hence, eccrine poroma might fully resemble benign and malignant tumors.^{2,6,7,9} Lallas et al. even dubbed poroma as the great dermoscopic imitator.⁹ The presence of unusual clinical variants makes the diagnosis even more confusing.¹³ The dermoscopy appearance of the first patient showed two major components, multiple red dots and lacunae mimicking glomerular vessels, and multiple whitish halos-like-keratosis. Red dots with whitish halos can be seen in dermoscopy of verruca vulgaris, while glomerular vessels and keratosis is usually found in Bowen's disease. The dermoscopy examination of our second patient only showed some loop hemorrhagic and thrombosed vessels, which are quite inconclusive.

The definite diagnosis of EP is feasible only histopathologically. EP arises from the lower part of the epidermis, extending into the dermis as tumor masses. It consists of small uniform cuboidal cells with round basophilic nucleus, connected by intercellular bridges.^{3,13} Broad anastomosing bands of epithelial cell, narrow ductal lumina, and occasional cystic spaces similar to eccrine sweat duct lumina are characteristically found.³ Histopathology examination of both our cases revealed eccrine poroma which showed similar patterns.

The treatment of choice for eccrine poroma is surgical excision. From the literature, it is known that only few recurrence occur after excision, and transformation into malignancy rarely happen.¹

Conclusion

Eccrine poroma (EP) is an adnexal benign tumor that often mimics malignancy. EP is a prominent mimicker, often misdiagnosed as it is uncommon in clinical practice, has variable clinical presentations and dermoscopic appearances. Recognizing and diagnosing this entity is a challenge for dermatologist, when in doubt biopsy is mandatory.

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