A Growing Mass under the Nail: Subungual Eccrine Poroma

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Established Facts

- Eccrine poroma is a rare adnexal neoplasm arising from eccrine sweat glands.
- The most common localization of eccrine poroma is palmoplantar areas that are rich in eccrine sweat glands.

Novel Insights

- There have been very few reports of nail-related eccrine poromas.
- Dermoscopy may allow the recognition of specific features of eccrine poromas.

Keywords

Eccrine poroma · Subungual · Hairpin vessels

Abstract

Eccrine poroma is a benign adnexal tumour, which originates from the acrosyringium of eccrine sweat glands. Eccrine poroma is an uncommon neoplasm, the typical clinical presentation of which is a solitary soft sessile reddish papule protruding from a cup-shaped shallow depression. Many challenges remain in the diagnosis of eccrine poroma because it does not always present with classical features and may mimic any other cutaneous benign and malignant lesions. Eccrine poromas may occur on any skin surface with sweat glands; on the other hand, the most common sites of involvement include the palms and soles, which are rich in eccrine sweat glands. Here, we present a case of subungual

eccrine poroma, which is an extremely rare presentation of poromas. We also highlight dermoscopic features of eccrine poroma and review the available literature on the subject.

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Introduction

Eccrine poroma is an uncommon adnexal neoplasm arising from the acrosyringium of eccrine sweat glands. The typical clinical presentation of eccrine poroma is a solitary soft skin-coloured to pinkish red papule or nodule, which is localized on palmoplantar areas. One of the characteristic features of eccrine poromas is the presence of an epidermal depression surrounding the lesion. The surface is generally flattened and the lesion bleeds easily

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Color version available online

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Color version available online

Fig. 1. Subungual pinkish verrucous lesion with a clear-cut keratotic border on the right big toe. Note nail plate discoloration.
Fig. 2. Dermoscopy of the lesion revealing branched atypical hair-pin vessels (yellow arrows), coiled vessels (purple stars), and yellow structureless area (turquoise arrow). Note white halo around vessels (x10).

Color version available online

Fig. 3. Nail plate dermoscopy showing reddish-purple pigmentation on yellowish background and distal onycholysis (x20).

Color version available online

Fig. 4. Polymorphous vessels, blood clots, yellow structureless area, and peripherally located yellowish keratin mass are seen in closer view (x30).

when it is traumatized on weight-bearing areas. Symptoms like pain and pruritus are rare and, if present, may indicate potential malignancy. Eccrine poromas can be found on any skin surface; however, the most common localization is palmoplantar areas, which are rich in eccrine sweat glands [1–7]. Here, we report a case of subungual eccrine poroma, which is an extremely rare presentation of the condition.

Case Report

A 42-year-old man visited our outpatient clinic with a 4-year history of a growing lesion under his right big toenail. He described the lesion as an insidiously growing mass without pain or discomfort and denied any history of preceding trauma. He had received one course of cryotherapy 1 year previously, without any improvement. He was otherwise healthy with no known medical conditions. Dermatological examination revealed a subungual well-circumscribed skin-co-

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Fig. 5. Clinical image of the lesion after partial nail plate avulsion.

Fig. 6. Intraoperative dermoscopy revealing polymorphous vessels and white interlacing areas around vessels.

Fig. 7. Well-circumscribed lesion composed of collections of basalioid cells. Cords and aggregates of poroid cells that connect with the epidermis in the superficial dermis (H&E, ×40).

Fig. 8. Poroma composed of poroid and cuticular cells (H&E, ×100).

loured to pinkish red verrucous lesion arising from the distal nail bed of the right big toe (Fig. 1). Dermoscopic evaluation of the lesion demonstrated atypical branched hairpin vessels and coiled vessels, blood clots, a yellow structureless area, and peripherally located yellowish keratin masses (Figs. 2–4). Total surgical excision was performed after partial nail plate avulsion and nail bed ablation (Figs. 5, 6). Histological examination of the excised lesion revealed a well-circumscribed tumour composed of collections of basaloid cells. Poroid and cuticular cells were observed (Figs. 7, 8). Based on the history, and clinical, dermoscopic, and histopathological findings, a diagnosis of subungual eccrine poroma was established. The patient was kept under follow-up. No recurrence has been detected to date.

Discussion

Eccrine poroma is a rare adnexal neoplasm, which is typically found on palmoplantar surfaces. Some cases have been described presenting eccrine poromas with other localizations, such as the trunk, face, and neck [2]. However, nail unit involvement is extremely unusual for eccrine poromas. A literature search yielded not more than ten publications related to nail unit involvement of eccrine poromas [3–12]. Although the exact pathogenesis has not

been understood yet, several factors have been implicated as etiological factors for eccrine poroma, including solar damage, radiation exposure, trauma, and human papillomavirus infection [2, 6]. Since the nail does not contain any skin appendage, the course of tumorigenesis of nail-related eccrine poromas is totally unclear. The main question is how and from where do poroid cells start to proliferate. One theory suggests hyponychium and nail folds as the tissue of origin, which implies that the tumour emerges from these structures and extends to the nail bed [5].

Given the utmost rarity of nail-related eccrine poromas, making an accurate diagnosis is unquestionably challenging [3–12]. Dermoscopy has been proven to be an incomparable tool in the practice of dermatology, which aids the diagnosis of innumerable skin diseases. A recent study conducted by the International Dermoscopy Society (IDS) has shown that dermoscopy may allow recognition of specific dermoscopic features of poromas [13]. However, it has been emphasized that these findings had not been well characterized previously; thus, it is not only clinically but also dermoscopically difficult to differentiate poromas from other benign and malignant lesions. One of the distinctive dermoscopic features of poromas has been demonstrated as branched vessels with looped or coiled endings. Few reports had defined this finding as cherry-blossom vessels, flower-like vessels, floral vessels, chalice-like vessels, and leaf-like vessels. These structures appear like looped vessels but also exhibit ramifications that show circular tips. Dermoscopy of eccrine poromas is characterized by a vascular pattern, which may be polymorphous. Although branched vessels with rounded endings seem to be more specific, other vascular structures, including arborizing, dotted, comma, coiled, hairpin and atypical hairpin vessels, have also been linked with poromas [1, 13].

Our case distinctively exhibited atypical branched hairpin vessels. As far as we know, this is the first description of atypical branched hairpin vessels in a case with subungual eccrine poroma. Moreover, we have demonstrated coiled vessels, interlacing white areas around vessels, yellow structureless area, keratin scales, and blood spots, which are other specific dermoscopic features of poromas. Our case not only serves as one of the few reported cases of subungual eccrine poroma but also supports the importance of dermoscopy in the diagnosis of eccrine poroma. In our opinion, as new cases emerge and specific dermoscopic features are described, a more practical approach in the diagnosis of eccrine poroma will be succeeded.

Statement of Ethics

The patient has given consent to publish details and photos of this case.

Conflict of Interest Statement

None of the authors declare any financial support or relationships that may pose a conflict of interest regarding this paper.

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Author Contributions

All the authors fully contributed to preparation of this manuscript.

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