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Case Report

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Cutaneous Eccrine Porocarcinoma: Diagnostic Challenge in Darker Skin Tones Individual

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ABSTRACT

Skin cancers are often misdiagnosed or diagnosed late in people with darker skin tones, which can lead to increased morbidity and mortality. This is especially true for rare skin cancers, such as Eccrine Porocarcinoma (EPC), which only accounts for 0.005 to 0.01 of all epidermal skin tumours. People with darker skin tones are less likely to receive a direct diagnosis for EPC. This rare type of skin cancer is often misdiagnosed as both benign and malignant tumors of the skin. This case study presents a 45-year-old man who visited our dermatology clinic with a painless, non-pruritic lesion on the sole of his right big toe that had persisted for 10 years. It is suspected that the lesion may have transformed from Eccrine Poroma.

Introduction

Eccrine Porocarcinoma is a malignant sweat gland tumor with an unclear etiology. Malignant skin adnexal tumors are considerably divided into four types: eccrine, apocrine, mixed, and unclassified tumors. Sweat gland porocarcinoma, first described by Pinkus and Mehregan in 1963, is a rare type of adnexal carcinoma that accounts for < 0.01% of all skin malignancies [1]. Eccrine Porocarcinomas have a propensity to affect the lower extremities in elderly people. A clinical diagnosis based solely on a physical exam is challenging and confusing other types of skin tumors, especially cutaneous squamous cell carcinoma in both clinical presentation and histopathology findings. Initially, this case was diagnosed as squamous cell carcinoma in both clinical and cytology results before being referred to the dermatology outpatient department.

Case Report

A 45-year-old male patient presented to a dermatology clinic, Hiwot Fana Specialized Comprehensive Hospital, for evaluation of nonpainful, non itchy skin lesions on the plantar surface of the right big toe that had been present for 10 years. The patient stated that the lesion initially looked like warts and gradually increased in size to its current size. The patient claimed that the lesion was associated with intermittent bleeding after some time. The patient is a soldier and does not recall any trauma to his foot. He has not had a similar lesion or any surgery, and there are no lesions on the other side of his body. On physical examination, a 1×2 cm well-demarcated skin-colored/pinkish plaque with an ulcerative lesion is exhibited on the plantar surface of the right big toe, as shown in (Figure 1). No palpable lymphadenopathy is identified in any accessible area. The blood count (CBC) and organ function tests (OFT) were within the normal range, and chest X-ray, foot X-ray, and abdominal ultrasound did not find any abnormalities. After the incisional biopsy was taken from the lesion and sent for histopathology, the histologic section showed skin-covered tissue with an area of ulceration and underlying dermis showing infiltrative nests and broad anastomosing bands of mildly atypical round cells with scant to moderate eosinophilic-cytoplasm (Figure 2). In some areas, the tumor maintains a connection with the epidermis, and cuticle-lined ducts are seen pointing toward eccrine differentiation (Figure 3). A wide local surgical excision is performed, and an appointment is given for follow-up in 4-6 months to the patient.

Unfortunately, we do not have a postoperative photograph of the patient.

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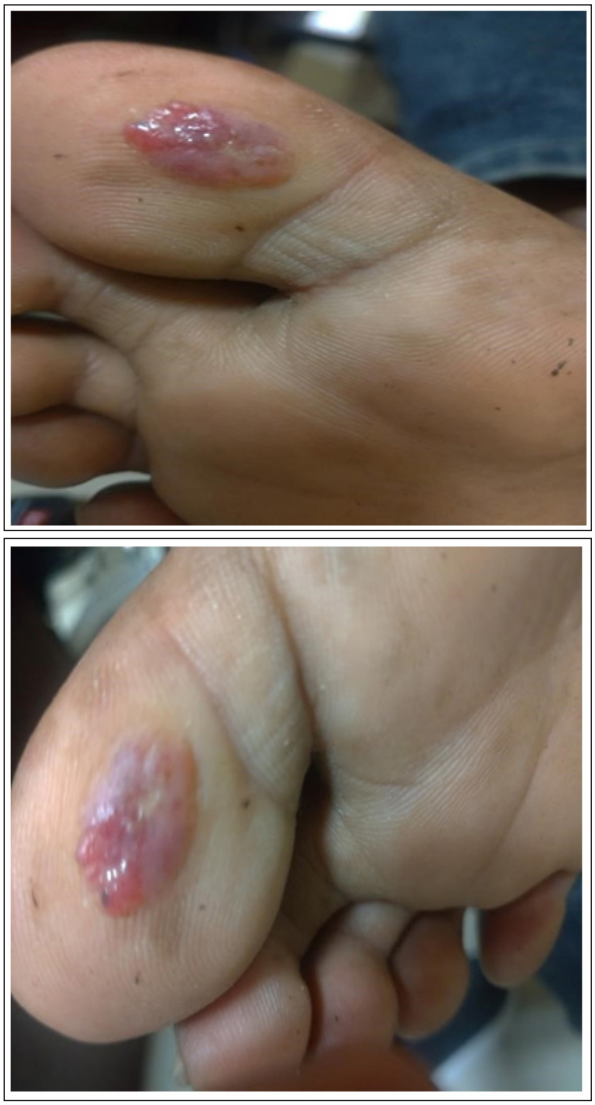

Figure 1: A lesion is exhibited on the plantar surface of the right big toe

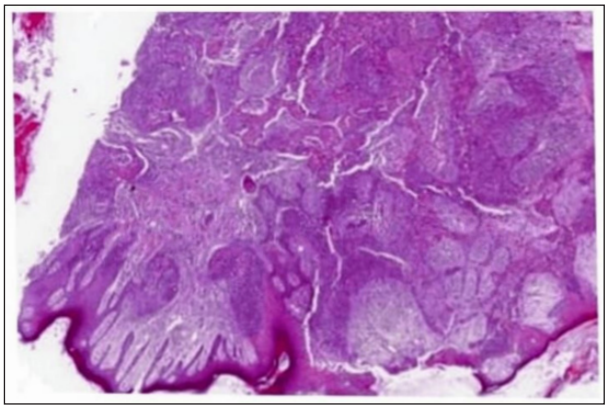

Figure 2: This image shows the infiltrative nature of the tumor and Epidermal connection. The infiltrative nature is more supportive of Porocarcinoma than poroma. The presence of epidermal connection is against squamous cell carcinoma and in favor of Porocarcinoma

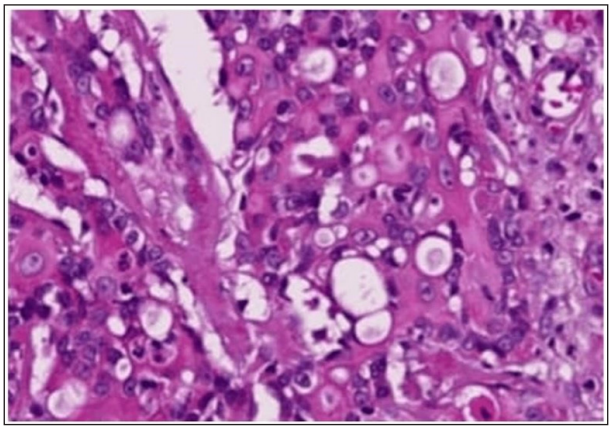

Figure 3: This picture shows multiple cuticle-lined ducts pointing toward eccrine differentiation, which is an essential feature of Porocarcinoma and the main feature that differentiates porocarcinoma from squamous cell carcinoma

Discussion

Due to the rarity of EPC, current epidemiological data are mainly derived from a few population-based as well as retrospective studies and meta-analyses. EPC has been shown to mostly affect the elderly population. Systematic reviews of 453, 206, and 120 cases have demonstrated a mean age of presentation ranging from 63.6 to 65.6 years [1-4]. Similarly, analysis of the U.S. The National Cancer Database from 2004 to 2016 identified 611 cases of EPC with a mean age of presentation of 66 years [5]. The pathogenesis of EPC is not fully understood. It may develop de novo or arise from its benign counterpart, eccrine poroma, after a latency period of years or even decades [6]. This has been supported by published case series with long-term follow-up, as well as the results of a clinicopathologic study of 69 cases reporting that 18% of EPCs demonstrated adjacent features of benign poroma [7,8]. Diagnosis of EPC is challenging, as it is characterized by variable and non-specific clinical and histopathological findings, leading to diagnostic delay in most cases. Interestingly, the mean interval between tumor development and diagnosis has been reported to be five to nine years, but it may vary from days to even 60 years, according to the published literature [3,7-10]. Clinical differential diagnoses comprise benign or malignant lesions, such as pyogenic granuloma, seborrheic keratosis, squamous cell carcinoma (SCC), basal cell carcinoma (BCC), Bowen's disease, etc. diagnosis should be based on the combination of clinical, dermoscopically, histopathological, and immunohistochemical findings. The clinical presentation of EPC is highly variable. Usually, it manifests as an erythematous, violaceous nodular lesion or, more rarely, as a polypoid plaque of violet or erythematous color, growing over weeks to months. It may be asymptomatic or present with itching, ulceration, and spontaneous bleeding. The latter should be clinically regarded as a sign of malignant transformation, and it has been found to represent a significantly worsening prognostic factor [4,6,11]. The tumor size at the time of diagnosis has been reported to range from 1-130 mm, having a mean diameter of 23.88 mm [12]. Behbahani et al. sought to correlate the tumor stage with the disease outcome. Except for the strong association of metastatic disease with a worse prognosis, a larger tumor size was also independently associated with decreased overall survival [12]. In a study of 69 cases, as well as a SEER analysis of 563 cases,

the lower extremities were found to be the most commonly affected body site (33.7-44%), followed by the head and neck (18- 30.6%) and trunk (19.524%) [8,13]. The histopathological characteristics of EPC in hematoxylin and eosin staining are diverse and may pose difficulties in histopathological differential diagnosis of EPCs, mainly from SCC. In most cases, large poromatous basaloid epithelial cells exhibitingductal differentiation and cytologic atypia are observed [10]. In a meta-analysis of 120 EPCs, 25% and 23.4%of cases showed squamous .and clear cell differentiation, respectively, while in another study of 33 cases, squamous cell differentiation was observed on 422% and melanocyte colonization in 21% of EPCs [4,10]. Complete surgical excision should be performed in resectable cases to achieve local control of the disease. According to the literature, wide local excision (WLE) with at least 2-mm safety margins constitutes the most commonly applied procedure associated with low recurrence rates and increased survival, as also demonstrated by a meta-analysis of 120 cases of head and neck EPCs, showing that the lack of WLE or Mohs micrographic surgery (MMS) was associated with worse prognosis and decreased overall survival ($p < 0.001$) [4]. Comparison of these treatment modalities revealed a statistical significance regarding recurrence rates (25.3% vs. 0.0% for WLE and MMS, respectively), although this result should be evaluated with caution due to the lack of randomization between the two surgical procedures [4].

Conclusion

This case is presented to review case reports of EPC proven in people with darker skin tones, highlighting important clinical and histopathological characteristics. Due to its rarity and the challenge of diagnosing based on clinical presentation alone, a high clinical index of suspicion, multidisciplinary involvement, and early intervention are required.

Disclosures

Human subjects: Consent was obtained or waived by all participants in this study. Conflicts of interest: In compliance with the ICMJE uniform disclosure form, all authors declare the following: Payment/services info: All authors have declared that no financial support was received from any organization for the submitted work. Financial relationships: All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. Other relationships: All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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Reference

1. Nazemi A, Higgins S, Swift R, In G, Miller K, et al. Eccrine porocarcinoma: New insights and a systematic review of the literature. Derm Surg. 2018. 44: 1247-1261.
2. Elder DEMD, Scolyer RA, Willemze R. Appendageal tumors. In WHO Classification of Skin Tumours, 4th ed.; International Agency for Research on Cancer: Lyon, France. 2018. 11: 159.
3. Pinkus H, Mehregan AH. Epidermotropic eccrine carcinoma. A case combining features of eccrine poroma and paget's dermatosis. Arch Derm. 1963. 88: 597-606.
4. Mishima Y, Morioka S. Oncogenic differentiation of the intraepidermal eccrine sweat duct: Eccrine poroma, poroepitheliom, a and porocarcinoma. Dermatologica. 1969. 138: 238-250.
5. Salih AM, Kakamad FH, Baba HO, Salih RQ, Hawbash MR, et al. Porocarcinoma; presentation and management, a meta-analysis of 453 cases. Ann Med Surg. 2017. 20: 74-79.
6. Le NS, Janik S, Liu DT, Grasl S, Faisal M, et al. Eccrine porocarcinoma of the head and neck: Metaanalysis of 120 cases. Head Neck. 2020. 42: 2644-2659.
7. Behbahani S, Malerba S, Karanfilian KM, Warren CJ, Alhatem A, et al. Demographics and outcomes of eccrine porocarcinoma: Results from the National Cancer Database. Br J Dermatol. 2020. 183: 161-163.
8. Robson A, Greene J, Ansari N, Kim B, Seed PT, et al. Eccrine porocarcinoma (malignant eccrine poroma): A Clinicopathologic study of 69 cases. Am J Surg Pathol. 2001. 25: 710-720.
9. Shaw M, McKee PH, Lowe D, Black MM. Malignant eccrine poroma: A study of twentyseven cases. Br J Dermatol. 1982. 107: 675-680.
10. Belin E, Ezzedine K, Stanislas S, Lalanne N, Beylot-Barry M, et al. Factors in the surgical management of primary eccrine porocarcinoma: Prognostic histological factors can guide the surgical procedure. Br J Dermatol. 2011. 165: 985-989.
11. Juay L, Choi E, Huang J, Jaffar H, Ho SAJE. Unusual Presentations of Eccrine Porocarcinoma. Skin. Appendage Disord. 2022. 8: 61-64.
12. Behbahani S, Malerba S, Karanfilian KM, Warren CJ, Alhatem A, et al. Demographics and outcomes of eccrine porocarcinoma: Results from the National Cancer Database. Br J Dermatol. 2020. 183: 161-163.
13. Scampa M, Merat R, Kalbermatten DF, Oranges CM. Head and Neck Porocarcinoma: SEER Analysis of Epidemiology and Survival. J Clin Med. 2022. 11: 2185.