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Eccrine Porocarcinoma of the Foot: A Case Report

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Abstract

Eccrine porocarcinoma is a rare type of adnexal carcinoma with a proclivity towards the intraepidermal portion of the eccrine sweat gland and most commonly affects the lower extremity. This malignant tumor typically grows slowly and may arise de novo or evolve from a pre-existing benign eccrine poroma. Histologic evaluation demonstrates anaplastic cells involving the epidermis and infiltrating the dermis. Treatment modalities have included local wide excision, Mohs micrographic surgery, adjuvant chemotherapy, and radiation therapy. Although there is no widely accepted uniform treatment guideline, eccrine porocarcinoma is usually cured by surgical wide excision with clear margins with a high rate of recurrence and mortality with nodal metastases. A case of a 77-year-old male who originally presented with a painful, ulcerative lesion on the dorsum of the foot resulting from a malignant transformation of a previous benign hydroacanthoma simplex/poroma is reported. Our observation is compared with a review of the literature with hope of expanding the diagnosing clinician's armamentarium for screening, diagnosis, and treatment of this rare malignant neoplasm.

Introduction

Eccrine porocarcinoma is an infrequently reported malignant sweat gland tumor of unclear etiology. These rare neoplasms present insidiously, are most commonly found on the lower extremities of elderly individuals and account for 0.005% of all epithelial cutaneous neoplasms [1]. A clinical diagnosis based on physical exam alone is challenging and may mimic other various kinds of skin tumors. Definitive diagnosis requires histological and dermoscopic analysis. The treatment requires a multidisciplinary effort that consists of a pathologist and surgeon. Wide local surgical excision is the de facto standard of care with curative rates up to 80% [6]. Local recurrence and regional lymph node involvement are reported as high as 20% with a 67% mortality linked to distal lymph node metastases [2,11].

Case report/series

A 77 year old African American male with a past medical history of hypertension and hyperlipidemia presented to the dermatology clinic for evaluation of a painful, bleeding ulcerative lesion on the dorsum of the left foot after a remote history of a traumatic burn from a soldering iron two years earlier. A shave biopsy was identified as a hydroacanthoma simplex/poroma. He was subsequently referred to the Department of Podiatry in 10/2015 for surgical excision of the lesion given pain, bleeding, and difficulty wearing shoes.

Prior to presenting to the podiatry department, the patient was seen by his primary care physician complaining of unexplained weight loss. Given the concern for possible foot mela-

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noma, a chest radiograph and CT scan were obtained revealing no evidence to suggest malignancy or lymphadenopathy within the chest, abdomen, or pelvis.

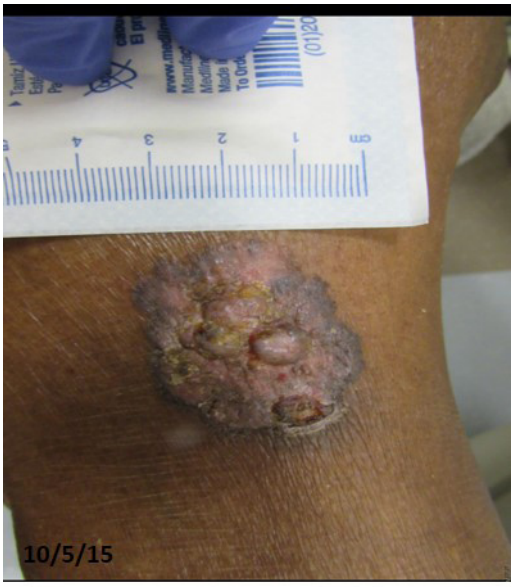
An evaluation of the lesion revealed a verruca-like appearing lesion measuring 3 cm x 4 cm with nodulous skin islands, serpinginious borders, and fissuring with vascularity. There were no clinical signs of infection. The neurovascular evaluation was unremarkable with intact epicritic sensation and palpable pedal pulses. There was no tenderness with ankle joint, mid tarsal joint, and MTPJ range of motion. Muscle strength was intact and equal within all major quadrants and there was no appreciable edema or ecchymosis.

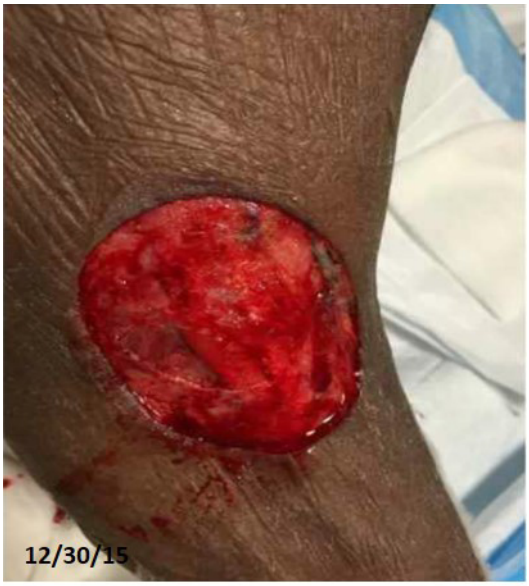
The patient was subsequently taken to the OR for excision of the lesion in combination with application of a split thickness skin graft taken from the ipsilateral thigh. The patient was placed supine on the operative table. After IV sedation administered by the anesthesia team, the left foot was anesthetized with local anesthesia utilizing a regional field block around the lesion. Patient was given two grams of Cefazolin IV antibiotics for prophylaxic antibiosis prior to incision. The lesion was excised down to subcutaneous tissue leaving a 4 cm x 5 cm oval shaped defect. The defect was covered with a split thickness skin graft taken from the ipsilateral thigh with the assistance of plastic surgery. The borders of the lesion were tagged with suture in order to maintain the orientation. The specimen was sent preserved in formalin to pathology, which was later identified as a porocarcinoma with nuclear atypia and invasive epidermal nests consistent with a transformation of a benign neoplasm.

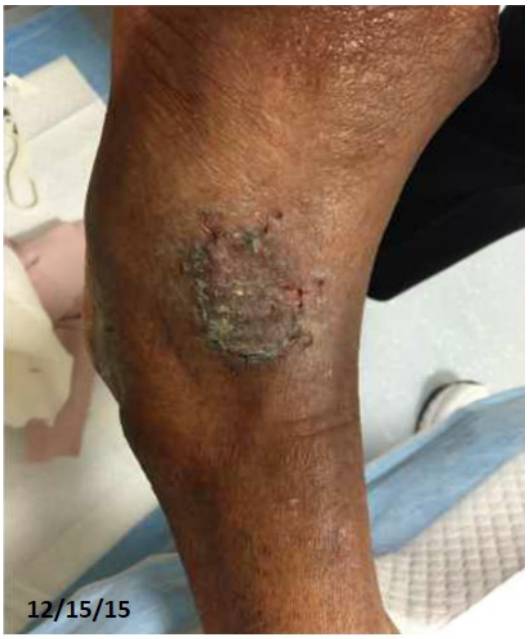
After consultation with the orthopedic oncologist, it was recommended for re excision with wider 1cm margins around the lesion. For surveillance it was recommended for MRI with contrast of the foot, ultrasound of the inguinal lymph nodes, and chest imaging alternating between CT and radiographs every four months for the 1st two years, then every six months thereafter for the next three years.

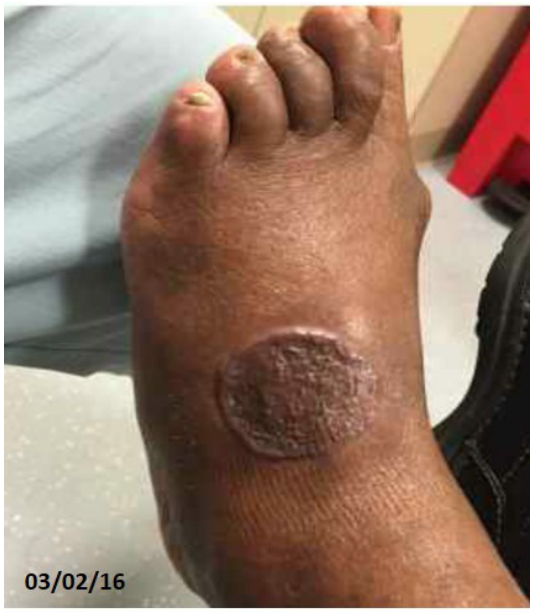
The patient was taken back to the OR for successful re excision revealing clean margins and subsequently grafted with a split thickness skin graft.

Four-year interim patient follow up in the clinic has shown that the patient is free of local recurrence or metastases.









Discussion

Eccrine porocarcinoma is a rare malignant sweat gland tumor arising from the intraepithelial ductal parts of the sweat gland that was first reported in the literature by Pinkus and Mehregan in 1963 [1]. Initially coined as an "epidermotrophic eccrine porocarcinoma," this rare type of malignant tumor was later termed, "eccrine porocarcinoma" by Mishma and Morioka in 1969 [2]. Most of our understanding of these lesions is limited to anecdotal case reports. These neoplasms are most commonly found on the lower extremities, followed by the head, scalp, and upper extremities, trunk, abdomen and account for 0.005% of epithelial cutaneous neoplasms [1]. The typical presentation of an eccrine porocarcinoma is an asymptomatic, < 2 cm in size slow growing, fungating nodule that is erythematous to violaceous in color. It may be verrucous or ulcerative in nature. The lesion is usually seen in the elderly population with equal incidences in both sexes [8]. The age of diagnosis is commonly seen between the 6^{th} – 8^{th} decades [4]. Multiple lesions are uncommon. A high clinical index of suspicion is required for timely intervention and to mitigate potential risk of distant metastasis. Diagnosis is challenging given the rarity of presentation as well as by morphological overlapping clinical and histological features among other types of rare malignant sweat gland tumors such as squamous cell carcinoma, basal cell carcinoma, hydradenocarcinoma, and amelanotic melanoma. The lesion is thought to arise from the intraepidermal component of the sweat duct and is composed of duct like structures and cuboidal cells when viewed under microscopy [3]. A clinical diagnosis is insufficient, requiring histological analysis with immunohistochemical staining which exhibits immunoreactivity for cytokeratins, carcinoembryonic antigens, and epithelial membrane antigens. Eccrine porocarcinomas may start primarily as a malignant neoplasm, but commonly arises as a result of malignant transformation from a benign eccrine poroma in approximately 20% of cases [2]. While the etiology remains unclear, the progression to malignancy appears to take a mean of 8.5 years [9]. Prognosis is variable depending on histopathological findings including lymphovascular invasion, depth of invasion > 7mm, mitosis > 14/10 hpf, and lymph node involvement [5]. The infiltrative histological subtype is strongly predictive of local recurrence compared to pushing or pagetoid subtypes [7]. Regional lymph node involvement and recurrence of porocarcinoma are approximately 20%, however systemic spread and death are implicated in up to 10% of cases [2]. There is an approximately 67% mortality in patients with lymph node metastases [11]. Wide local surgical incision is the treatment of choice for localized lesions with varying therapeutic efficacy using adjuvant chemotherapeutic agents. Curative rates of 70% – 80% of cases have been found after wide local excision [6]. Mohs micrographic surgery has seen promising results. Xu et al reviewed 27 cases of eccrine porocarcinoma treated with Mohs microsurgery with a mean follow up of six years and noted no local recurrence, distal metastases, or disease specific death in all cases [7]. This case is presented because of its rarity and challenge to diagnose based on clinical presentation alone requiring a high clinical index of suspicion, multidisciplinary involvement, and early intervention.

References

1. Pinkus H, Mehregan AH. Epidermotropic eccrine carcinoma. Arch Dermatol. 1963; 88: 597-606.
2. Mishma Y, Morioka S. Oncogenic differentiation of the intra-epidermal eccrine sweat duct: eccrine poroma, poro-epithelioma, and porocarcinoma. Dermatolgiica. 1969; 138: 238-250.
3. Du Vivier A, McKee P. Benign tumours of the skin. In: Atlas of Clinical Dermatology, chap 6, p 15, WB Saunders Company, Grower Medical Publishing, New York. 1986.
4 Gerber PA, Schulte KW, Ruzicka T, Bruch G. Eccrine porocarcinoma of the head: An important differential diagnosis in the elderly patient. Dermatology. 2008; 216: 229-233.
5 Kurashige Y, Minemura T, Nagatani T. Eccrine porocarcinoma: Clinical and pathological report of eight cases. Case Rep Dermatol. 2013; 5; 259-266.
6 Marone U, Caraco C, Anniciello A, Di Monta G, Chiofalo M, et al. Metastatic eccrine porocarcinoma: report of a case and review of the literature. World Journal of Surgical Oncology2011; 9; 1-4.
7 Xu Y, Aylward J, Longley J, Hinshaw M, Snow S. Eccrine Porocarcinoma treated by Mohs micrographic surgery: Over 6-year follow up of 12 cases and literature review. Dermatol Surg. 2015; 41: 685-692.
8 Sawaya J, Khachemoune A. Poroma: A review of eccrine, apocrine, and malignant forms. International Journal of Dermatology2014; 53: 1053-1061, 2014.
9 Chang O, Elnawawi A, Rimpel B, Asarian A, Chaudhry N. Eccrine porocarcinoma of the lower extremity: A case report and review of literature. World Journal of Surgical Oncology2011; 9: 1-3.
10 Dias-Santagata D, Lam Q, Bergethon K, Baker G, Iafrate A, Rakheja D, Hoang M. A potential role for targeted therapy in a subset of metastasizing adnexal carcinomas. Modern Pathology. 2011; 24: 974-982.
11 Goel R, Contos M, Wallace M. Widespread metastatic eccrine porocarcinoma. J Am Acad Dermatol. 2003; 49: S252-254.
12 Sato Y, Fujimura T, Tamabuchi E, Haga T, Setsuya A. Dermoscopy Findings of Hidroacantoma Simplex. Case Rep Dermatol. 2014; 6: 154-158.
13 Asghar H, Mahmood H, Faheem M, Rizvi S, Khan K, Irfan J. Porocarcinoma: A Rare Sweat Gland Malignancy. Journal of the College of Physicians and Surgeons Pakistan. 2009; 19: 389-390.
14 Edamitsu T, Minagawa A, Koga H, Uhara H, Okuyama R. Eccrine porocarcinoma shares dermoscopic characteristics with eccrine poroma: A report of three cases and review of the published work. Journal of Dermatology. 2016; 43: 332-335.
15 Sheff J, MacDougall D. Unusual Case of Porocarcinoma of the foot with no clinically evident dermatologic manifestations. The Journal of Foot & Ankle Surgery. 2005; 44: 412-414.
16 Wong M, Tse G. Eccrine Poroma: A Differential Diagnosis in Chronic Foot Lesions. Foot & Ankle International. 2003; 24: 789-792.
17 Masamatti S, Narasimha A, Bhat A, Chowdappa V. Eccrine Porocarcinoma of the scalp: A rare case report with review of literature. Journal of Clinical and Diagnostic Research. 2016; 10: 15-16.
18 D'Amato M, Patterson R, Guccion J, White J, Krasnow S. Porocarcinoma of the heel a case report with unusual histologic features. Cancer. 1996; 78: 751-757.
19 Cardoso J, Calonje E. Malignant sweat gland tumors: an update. Histopathology. 2015 67: 589-606.