Case Report

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Palmar Surprise: A Case of Eccrine Poroma with Review of Literature

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Running Title Giant Eccrine Poroma of the Hand

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ABSTRACT

Eccrine poroma (EP) is a benign skin adnexal tumor that originates from eccrine sweat glands. It usually appears as a solitary mass on an extremity, commonly on the hand or foot. However, clinical presentation can be varied, posing diagnostic challenges. This study describes a rare case of ulcerative EP on the palm. It covers the clinical and histological features, the diagnostic and treatment approaches, and the potential for local recurrence or malignant transformation.

Introduction

Eccrine poroma (EP) is a benign skin adnexal tumor originating from eccrine sweat glands. It commonly occurs in the upper and lower extremities, especially the foot and sole [1, 2]. This slowly growing tumor often ulcerates over time, making early diagnosis difficult [3]. It closely resembles both benign and malignant skin lesions, clinically and radiologically, earning it the term “great imitator”. Histopathological examination (HPE) is crucial for differentiation. In this study, we present a case of ulcerative EP on the palm of an adult, diagnosed and treated at our hospital. This case highlights the importance of proper diagnosis and treatment for this rare entity.

Case Presentation

A 45-year-old man presented with painful ulcerative swelling on the palm of his right hand. The swelling had been progressively enlarging over the past six months. The patient reported that the symptoms included bleeding, discharge, ulceration, itching, crusting, and altered skin color of the overlying skin. He recalled a history of trauma to the palm before the onset of symptoms.

On clinical examination, a firm, tender, dumbbell-shaped ulcerative swelling was seen involving the thenar and hypothenar eminence of the right palm (Figure 1A). The skin lesion presented with hyperkeratosis and raised local temperature. The

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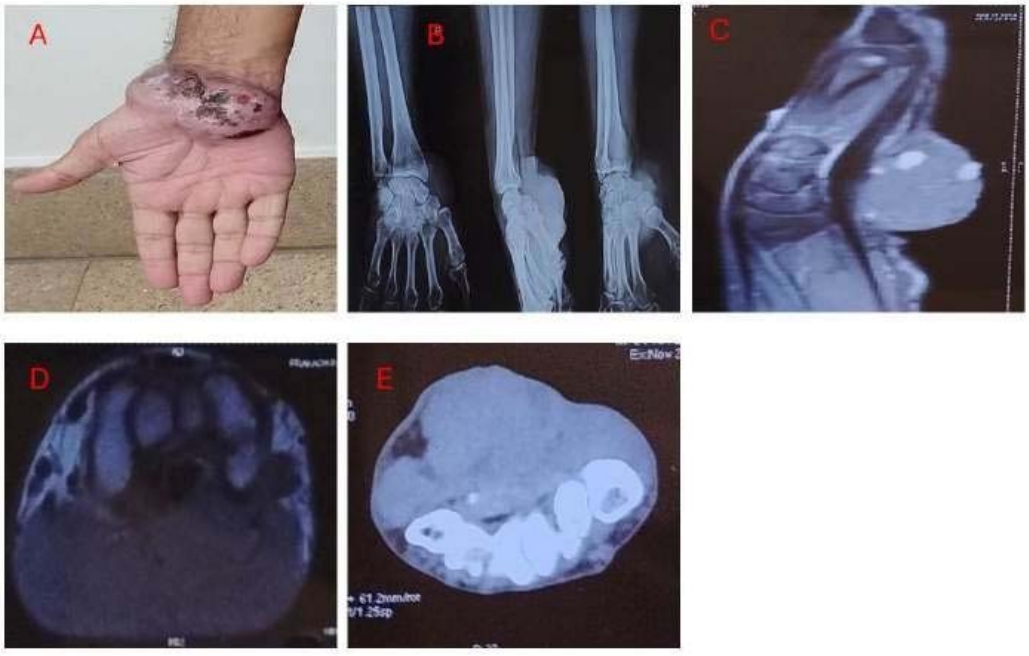


Fig. 1. (A) Clinical picture shows an ulcerative lesion involving the thenar and hypothenar eminence of the right hand. **(B)**Antero-posterior, lateral and oblique radiograph of the hand and wrist shows a soft tissue mass around the volar aspect of the palm. **(C)& (D)** MRI (sagittal and axial sections shows a soft tissue mass originating from the skin and subcutaneous tissue with preserved plane between the tumor and the palmar aponeurosis. **(E)** Computed tomography- angiogram of the right hand shows the involvement of the ulnar neurovascular bundle in the tumor mass.

progressive soft tissue swelling was suspicious for malignant transformation. The ring and little fingers showed symptoms of tingling and muscle weakness, pointing toward motor and sensory involvement. The radiograph showed an exophytic growth arising from the palmar aspect of the right hand (Figure 1B). MRI revealed a soft tissue mass measuring 6.7 × 5.2 × 2.5 cm with a few cystic areas involving the skin and subcutaneous tissue of the wrist joint on the palmar aspect (Figure 1C, D). CT angiography of the affected region showed involvement of the ulnar neurovascular bundle (Figure 1E). A punch biopsy was performed, and the HPE was suggestive of eccrine poroma (EP). The patient and his relatives were then counselled regarding the treatment plan, and after proper consent, surgery was performed.

The patient was lying supine on the operating table. After painting and draping, a skin incision was made over the palmar aspect of the hand, extending up to the wrist joint. Subcutaneous flaps were then raised, and the radial and ulnar neurovascular bundles were identified. The ulnar artery and nerve were seen to be involved by the tumor mass; the neurovascular bundle was then clipped, and the tumor was removed. Defect reconstruction was performed with the help of an anterolateral thigh (ALT) free flap harvested from the thigh of the same side. Closure was performed in sequential layers, and a drain was placed in situ (Figure 2).

The final HPE showed areas of nests and lobules of squamous cells having moderately eosinophilic cytoplasm, mild nuclear pleomorphism, and focal areas of keratinization within the stroma; all of these features were highly suggestive of EP (Figure 3).

In the postoperative period, the patient had an uneventful recovery, with slight weakness during finger flexion of the ring and little fingers. The patient showed improved Disabilities of the Arm, Shoulder and Hand (DASH) score from 50.8 to 28.3 postoperatively and was followed up for a period of 24 months, with no signs or symptoms of local recurrence (Figure 4).

A systematic literature search was performed using PubMed with the keywords “eccrine poroma” and “hand”. Publications from 2015 to 2025 were included, and all relevant studies available at the time of review were analyzed and summarized in Table 1 [4–12].

Discussion

In 1956, EP was first reported by Pinkus and colleagues [1]. EP originates from the eccrine sweat glands, which are found in the hairless, smooth regions of the hands and feet [2, 13]. Studies in the literature have shown no correlation between the occurrence of EP and factors such as age, sex, race,

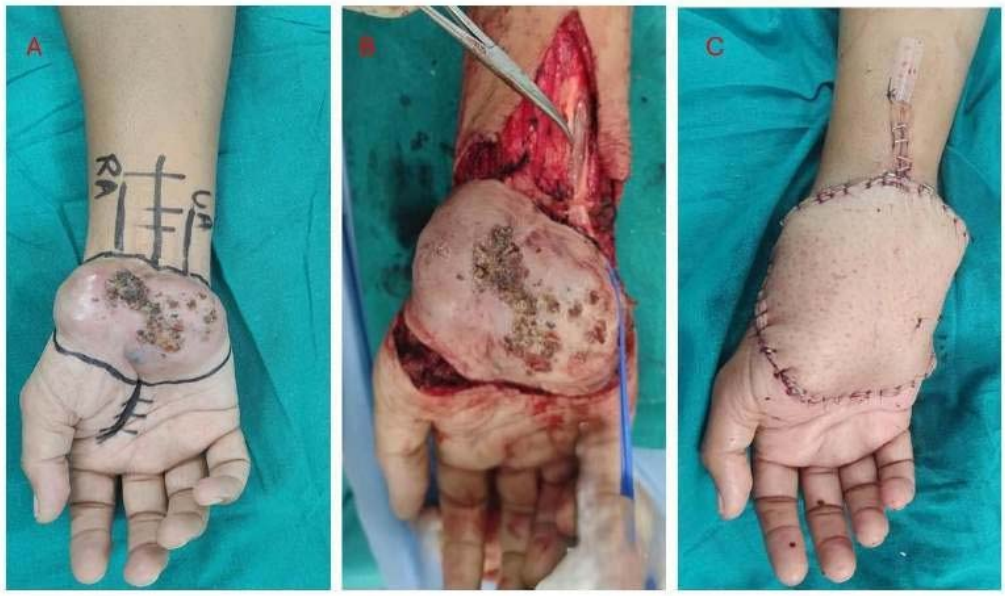


Fig. 2. (A), (B) & (C) shows the surgical procedure of the wide local excision and reconstruction with ALT- free flap.

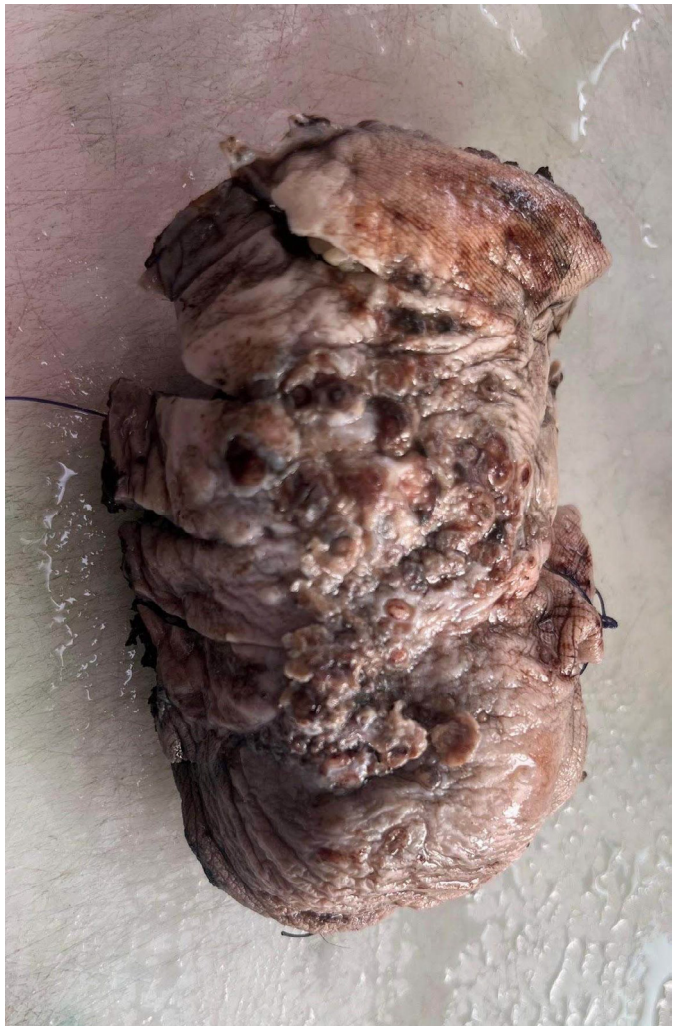
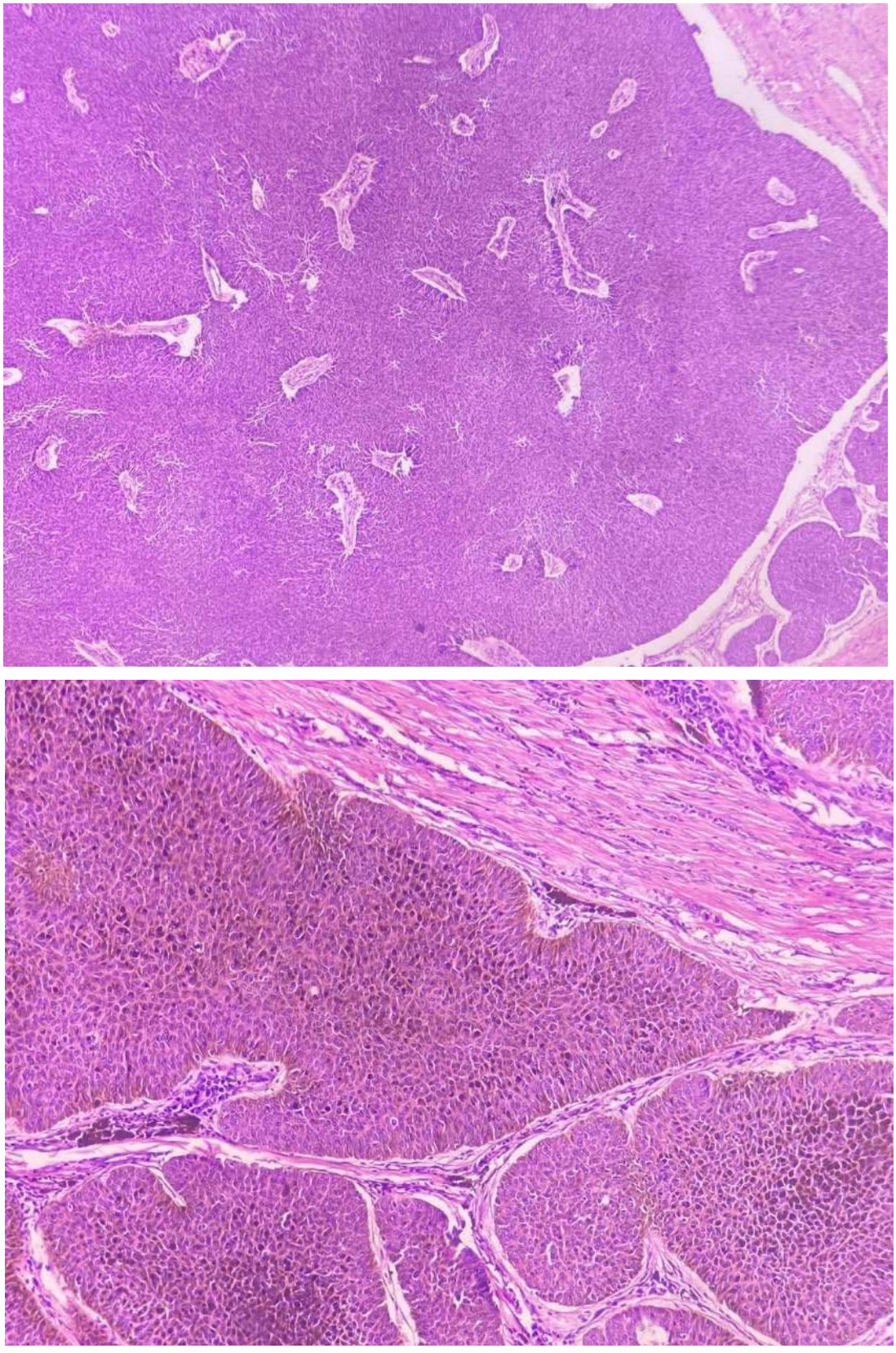


Fig. 3. (A),(B) Gross and cut section of eccrine poroma.
(C) Low power view shows sheets of monotonous cells replacing epidermis and extending into the dermis in broad anastomosing bands.
(D) High power view shows poroid cells with monomorphic small cuboidal and basophilic nuclei, inconspicuous nucleoli and eosinophilic cytoplasm.



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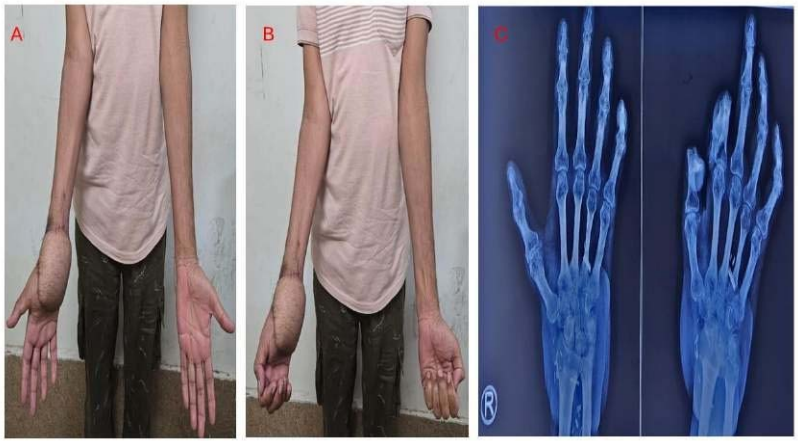

Fig. 4. (A), (B) Clinical picture shows the functional outcome at the final follow-up.
(C) Antero-posterior and oblique radiograph of the hand and wrist at the final follow-up.

Table: 1 shows literature review of EP of the hand and wrist.

S.No	Study	Cases	Age, Sex	Side	Affected region	Clinical presentation	Tumor size	Radiological findings	Treatment	Followup
1.	Meziane M.[4] (2025)	1	56 years, M	R	Distal phalanx (DP) thumb	Nodular growth on volar aspect for 18 months	2.5x 1.2 cm	-	Excision	6 months
2.	B. Hannahs et al.[5] (2025)	1	70 years, M	L	Volar aspect of the palm	Non-mobile, compressive soft tissue mass on the volar aspect of palm. (b)Tingling in the median nerve distribution.	2.8X 1X 4.7 cm	(a) Radiograph shows degenerative arthritis. (b) MRI- shows mass between skin and flexor retinaculum with debris seen within the lesion.	Excision with carpal tunnel release	3 months
3.	V.S. Patil et al.[6] (2024)	1	38 years, M	L	Volar aspect of the palm	Soft, firm mass on the hypothenar eminence	-	-	Excision	15 years
4.	Mishra N et al.[7] (2024)	1	54 years, M	L	Volar aspect of the hypothenar eminence	Firm, oval shaped non tender swelling on the hypothenar eminence	1.8 cm	-	Excisional biopsy	2 years
5.	Alkidaiwi S et al.[8] (2023)	1	33 years, M	R	Volar aspect of middle finger	Well defined, red coloured nodule on the palmar aspect of the middle finger	2x 1 . 5 cm	-	Cryosurgery	1 year
6.	Bhasin GS et al. [9] (2023)	1	65 years, M	L	Volar aspect of the palm	Dark coloured lesion on the Hypothenar eminence for 10 years.	2 cm	-	Excision	-
7.	Nayak TV et al. [10] (2023)	1	65 years, M	L	Volar aspect of the palm	Well-circumscribed, non-tender, hyperpigmented lesion on the hypothenar eminence for 4 years.	1.5x 2 cm	-	Excision	-
8.	Jia QN et al.[11] (2019)	1	43 years, F	L	Volar aspect of the middle finger	Black, firm papule on the volar aspect of middle finger for 2 years.	2 mm	-	Excision	9 months
9.	MeiQi May et al. [12] (2016)	1	84 years, F	L	Volar aspect of the palm	Hyperpigmented verrucous nodule for 5 years	8x 5 mm	-	Shave biopsy	-

or family history. Usually, it is seen in the late 60s to 70s, but the present study and literature review show its occurrence in the middle-aged population [3]. Patients with a prior history of treatment with chemotherapy or radiation therapy have an increased risk of EP occurrence; the probable reason is cellular changes in the eccrine glands due to accumulation of toxic metabolites of chemotherapy drugs [13].

Clinically, EP usually presents as a small mass on the volar and plantar aspects of the hands and feet. However, when it presents as a large lesion with features of pain, bleeding, ulcerative growth, or rapid increase in tumor size over a short period of time, malignant transformation into malignant eccrine poroma or porocarcinoma should be considered [14]. The current study showed a similar clinical presentation and was thought to represent malignant transformation of EP. HPE is of the utmost importance to rule out malignant transformation.

The present study shows a large ulcerative EP of the hand that was treated by wide local excision (WLE) and ALT free flap for defect reconstruction. Clinical and functional improvement was noted, with a significant improvement in DASH score from 50.8 preoperatively to 28.3 postoperatively.

EP presents with a characteristic appearance of cuboidal epithelial cells in the form of nests and cords with scanty cytoplasm and rounded nuclei. Tumor cells show minimal pleomorphism, minimal or no mitotic figures, and absence of tumor necrosis and perineural involvement. Immunohistochemistry (IHC) examination shows the presence of cytokeratin 5/6 and carcinoembryonic antigen (CEA) in the ducts of eccrine glands [4, 14].

The treatment of choice for EP is surgical excision. For superficial lesions, treatment options include shaving biopsy, surgical excision, or electrosurgery. For deeper lesions, surgical excision is the treatment option. Studies in the literature show a minimum surgical margin of around 0.3–1 cm to decrease the chances of local recurrence (LR), whereas in the current study, 0.5 cm surgical margins were taken to lower the chances of LR. Regular follow-up is of utmost importance to look for signs and symptoms of LR and the occurrence of new lesions elsewhere in the body [15].

Limitations of our study are: (a) a short follow-up period of 24 months, as long-term follow-up is required to study optimal outcomes of WLE and local recurrence rate; and (b) a small sample size.

Conclusion

Eccrine poroma should be considered in the differential diagnosis of large, ulcerated palmar lesions that mimic malignancy. Histopathological examination is essential for definitive diagnosis, while complete surgical excision and regular follow-up are recommended.

Ethical Considerations

Ethical Board Approval

It was waived by our Institutional Review Board (IRB) approval.

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Conflict of Interests

The authors have no conflict of interest to declare.

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None

Patients' Consent Declaration Statement

The authors certify that they have obtained all appropriate patient consent forms. In the forms, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and that due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Use of AI

The authors confirm that no artificial intelligence (AI)-assisted technology was used in the writing or editing of the manuscript, and that no images were manipulated using AI.

Authors' contributions

PW, NB: Contributed to concepts, design, and manuscript editing. HS,NB: Contributed to design,

literature search, and manuscript preparation. AAS: Contributed to manuscript preparation, editing the final manuscript. All authors have critically reviewed and approved the final draft and are responsible for the manuscript's content and similarity index.

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