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Rare Case of Giant Proliferating Trichilemmal Tumor Behind Left Shoulder: A Case Report

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ABSTRACT

Proliferating trichilemmal tumor (PTT) is a rare, benign adnexal tumor of hair follicles that commonly mimics malignancy. Excellent outcomes can be achieved with early surgical excision. Delayed presentations—as in this giant shoulder PTT—are made possible, in part, by patient education and healthcare accessibility in low-resource settings.

1 | Introduction

Proliferating trichilemmal tumor (PTT) is an uncommon adnexal tumor that originates from the outer root sheath of hair follicles. It can develop from an existing pilar or trichilemmal cyst, often triggered by trauma or inflammation in that area [1]. Trichilemmal cysts (TCs) are the most prevalent type of cystic lesions found on the scalp, with about 2% of them developing into PTTs [2]. Approximately 90% of reported PTT cases are single lesions located on the scalp. However, these tumors can also occur in other areas of the body, including the face, ears, neck, shoulders, upper extremities, trunk, anogenital region, buttocks, and lower extremities [3, 4]. Clinically, PTTs are present as solitary, raised, firm nodules that may become ulcerated [3]. Microscopically, it is marked by a lesion that is partly cystic and solid, displaying enlarged keratinocytes, abrupt keratinization, an absence of a granular layer, and varying levels of cytological atypia [5, 6]. PTTs are mostly reported as lesions on the scalp [3], but here we are presenting a case of giant PTT on the shoulder and it is reported due to its rarity.

2 | Case History/Examination

A 55-year-old Pakistani woman presented to the plastic surgery ward with an irregular outgrowth behind the left shoulder (Figure 1). The outgrowth was freely movable and nontender to touch. It started as a small mass around 35 years ago during her first pregnancy and has been slowly growing in size since then. She had no history of similar lesions or family history of skin tumors. Her vital signs, such as temperature and blood pressure, were in the normal range. Systemic examination, including lymph node examination, was unremarkable.

3 | Methods (Differential Diagnosis, Investigations, and Treatment)

Sonogram was done, which showed a solid, heterogeneous mass lession of 7 × 6 cm in the left shoulder. Surgical excision of the mass was performed, with preoperative intravenous fluid administration. Coverage of the defect by rhomboid flap (Figure 2) along with

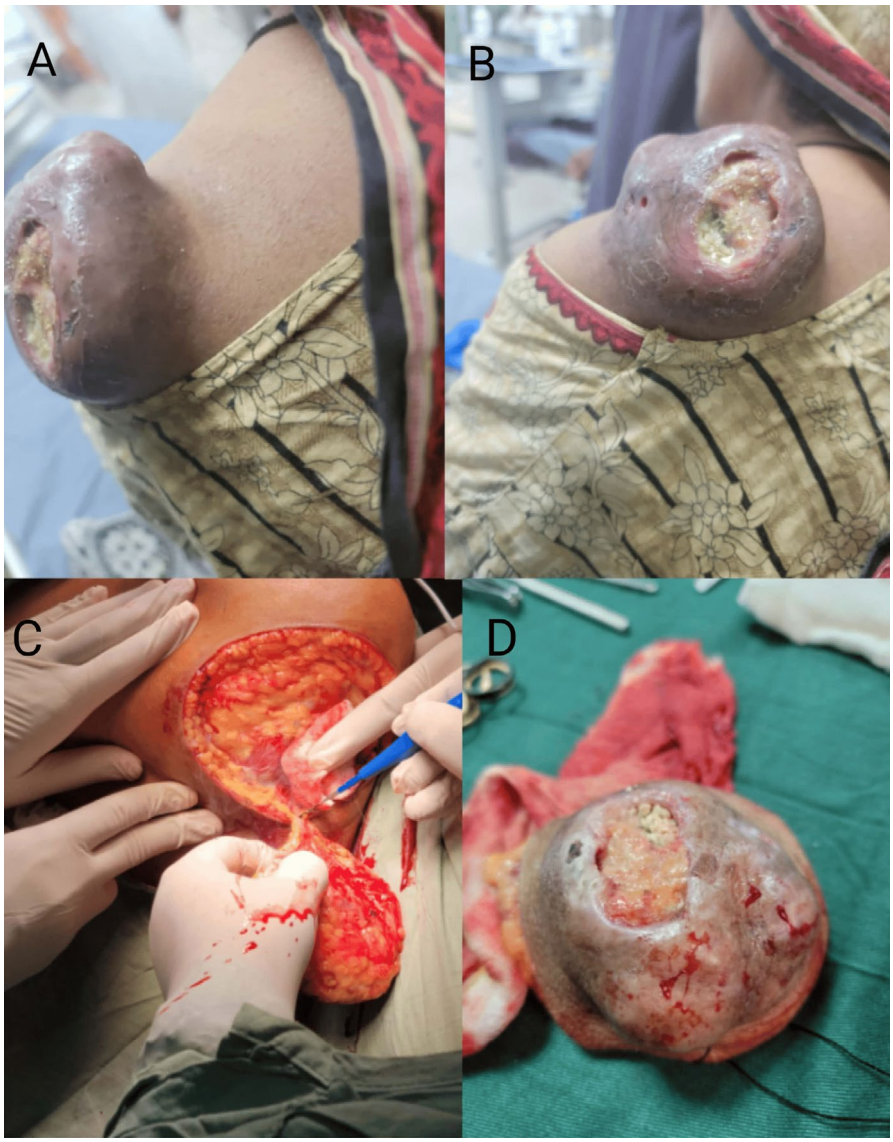

FIGURE 1 | (A) View of trichilemmal tumor on inspection from behind. (B) View of trichilemmal tumor on inspection from above. (C) Intraoperative surgical excision of the tumor. (D) Postoperative excised mass.

drain placement was performed. Postoperative blood transfusions were given in addition to analgesics and antibiotics. On histopathological examination, solid and cystic areas with evidence of keratinization, large polygonal cells with abundant eosinophilic cytoplasm, and areas of calcification were seen. No malignant features were present. Immunohistochemistry was CK14 positive and EMA negative, ruling out sebaceous or sweat gland tumors.

4 | Conclusions and Results (Outcome and Follow-Up)

The excised mass (Figure 1) was sent for histopathological evaluation, resulting in features consistent with PTT (Figure 3). After being kept under observation for a few days, the patient was discharged from the ward and has undergone an uneventful recovery. The patient was followed up for 6 months with no evidence of recurrence. She reported satisfaction with the cosmetic and functional outcome of the surgery.

5 | Discussion

A PTT also known as proliferating TC is a noncancerous growth that arises from the outer root sheath. They are a variant of a pilar tumor occurring in fewer than 2% of pilar cyst cases. They can ulcerate and may exhibit local aggressiveness. They are lined by stratified squamous epithelium without a granular cell layer, similar to what is seen in the outer root sheath of the hair follicle, and filled with keratin and its breakdown products [2, 7, 8]. PTT can arise either de novo or from an existing TC. Trauma and inflammation can trigger a TC to proliferate, exhibiting a wider range of pilosebaceous differentiation and cellular atypia that may resemble pseudo carcinoma, all while

retaining its benign biological behavior [9, 10]. In our patient, PTT arose de novo. Typically, PTT presents as a solitary, slow-growing, exophytic lesion that ranges in size from 2 to 25 cm [9]. The delayed presentation of our patient can be attributed to similar factors influencing the late reporting of other painless tumors in Pakistan, such as breast cancer. One major reason is ignorance of the disease. The patient might not perceive a painless lump, like that in the case of breast cancer, as a serious health concern. This ignorance often leads to years of neglect until the tumor grows significantly or begins to cause discomfort. Additionally, low financial resources for therapy serve as a significant barrier, as individuals may avoid seeking medical attention due to the expected costs of diagnosis and treatment. Educational factors and social status also play an important role in it [11].

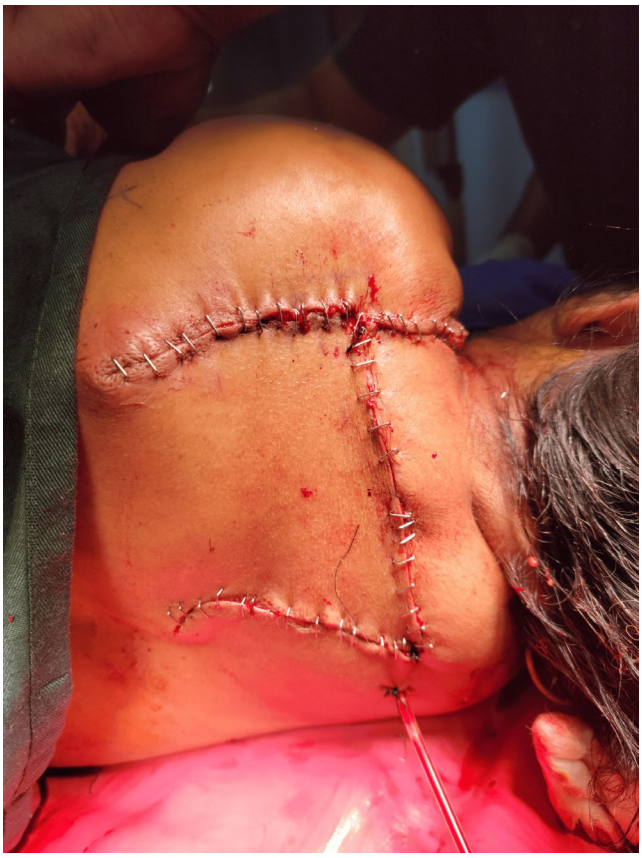

FIGURE 2 | Coverage of defect after surgical excision of trichilemmal tumor by rhomboid flap along with drain placement.

The diagnosis of a proliferating TC must be based on histological findings, as done in our case. Histologically, PTT consists of well-defined lesions with pushing borders, characterized by mild nuclear atypia and the absence of mitoses, necrosis, or neurovascular invasion with trichilemmal keratinization [12, 13]. Clinically, PTT should be differentiated from nodules that may ulcerate, including basal cell carcinoma, cylindroma, dermatofibrosarcoma protuberans, Merkel cell carcinoma, and skin metastasis. Radiological studies such as MRI can aid in this differential diagnosis [14]. PTTs are treated through surgical excision with a 1-cm margin of healthy tissue. Other treatment modalities, such as Mohs surgery and excision with frozen-section margin assessment, are also being used to decrease the recurrence rate. Adjuvant chemotherapy and radiotherapy are also given [8, 15]. Prognosis is generally good with complete excision of the lesion, with a total recurrence rate estimated to be between 3.7% and 6.6% [15]. In case of no surgical intervention, a TC can cause pain, particularly in areas subjected to pressure. Other potential complications include inflammation, infection, cosmetic changes, and calcification. Although postsurgical complications are scarring, as leading to bleeding, pain, and infection [8], in our patient, the postoperative recovery was free of complications.

This case is significant because of its late presentation and unusual location.

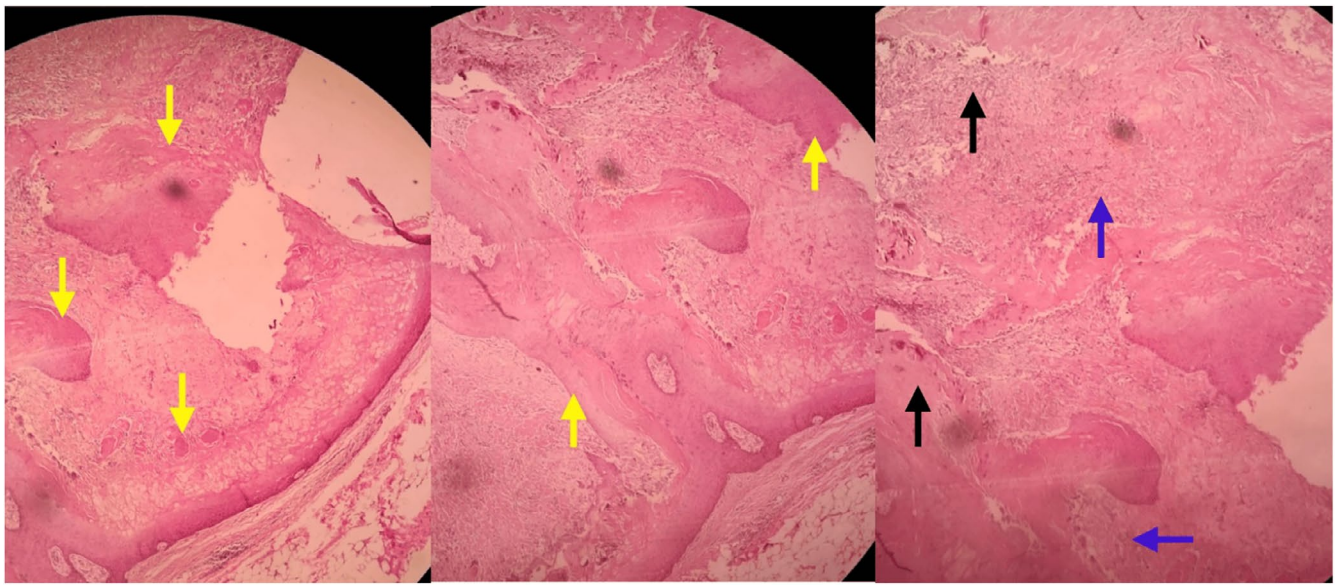

FIGURE 3 | On histopathological evaluation, the excised mass shows proliferation islands of squamous epithelium (yellow arrows) with abrupt keratin (blue arrows) and focal calcification (black arrows).

Author Contributions

Abdul Ahad Riaz: conceptualization, data curation, formal analysis, project administration, writing – original draft. **Faisal Naseer:** conceptualization, formal analysis, investigation, methodology, project administration, writing – original draft. **Allahdad Khan:** methodology, project administration, resources, writing – original draft, writing – review and editing. **Muhammad Asjad Sheikh:** investigation, methodology, software, validation, writing – original draft. **Linta Malik:** data curation, formal analysis, software, validation, visualization. **Aseel Kamal:** conceptualization, formal analysis, investigation, methodology, writing – original draft. **Anam Malik:** methodology, resources, software, supervision, visualization, writing – original draft.

Consent

Written consent from the patient was obtained.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Data available on request from the authors.

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