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BEYOND THE USUAL-TRICHOEPITHELIOMA AT AN UNUSUAL SITE- A CASE REPORT

Pathology

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ABSTRACT

Background: Trichoepitheliomas (TEs) are rare benign tumors arising from the undifferentiated pluripotent stem cells of the follicular sebaceous apocrine unit. Although commonly located on the face, TEs rarely involve the scalp, trunk, and extremities Accurate diagnosis, primarily relying on clinical assessment, morphological examination, and immunohistochemical (IHC) analysis, is crucial due to the heightened risk of malignant transformation in multiple familial variants. **Case Presentation:** A 60-year-old male presented with a singular skin-coloured plaque measuring 2 x 1.5 cm on the right side of the waist. The lesion was firm, non-tender, and fixed to the skin. Initial clinical and histological differentials included Basal Cell Carcinoma (BCC) and TE. Microscopic examination of the excisional biopsy revealed a dermal benign tumour with basaloid cells arranged in nests and sheets, showing peripheral palisading but no retraction artifacts. **Diagnostic Findings:** An IHC study was conducted using CD10, BER-EP4, CD34, and BCL-2. The tumour cells showed diffuse cytoplasmic reactivity to BCL-2 in the outermost proliferating layer of the nests, distinguishing it from reactions typically seen in BCC. CD10 demonstrated diffuse reactivity with stromal fibroblasts, while the tumour nests showed no reaction to BER-EP4. The strong stromal CD10 reactivity and lack of BER-EP4 staining reinforced the diagnosis of TE over BCC. **Conclusion:** Based on the comprehensive histological and immunohistochemical findings, a diagnosis of trichoepithelioma was established. This case underscores the importance of comprehensive histopathological evaluation in distinguishing TE, particularly in unusual locations, to ensure appropriate management and minimize unnecessary invasive procedures.

KEYWORDS

Trichoepithelioma, BCC, BCL-2

Trichoepitheliomas (TE) are rare benign tumour arising from the undifferentiated pluripotent stem cells of the follicular sebaceous apocrine unit.[1] TE have garnered significant attention not only due to their aesthetic and psychosocial implications but also heightened risk for malignant transformation especially in multiple familial variants.[2] Diagnosis primarily relies on clinical assessment, morphological examination and immunohistochemical analysis. We detail a case of solitary trichoepithelioma at an unusual location where the immunohistochemical markers and their reactions within the tumour cells and surrounding stroma were crucial for diagnosis.

A 60-year-old male presented with a well-defined raised lesion on the right side of waist . The physical examination revealed a singular skin-coloured plaque with brownish-crusted erosions measuring 2 x 1.5 cm. The lesion was firm, non-tender and did not bleed to touch . It was fixed to the skin, but not to the underlying structures. We received a formalin-fixed excisional biopsy specimen measuring 1.5 x 1 x 0.7 cm. Upon bisection, we observed a solid grey-white lesion. Microscopic examination revealed an ulcerated epidermis accompanied by a dermal (Figure 1)benign tumour exhibiting a follicular-like configuration. The tumour nests were found to be consistent with the overlying epidermis and cells were arranged in nests and sheets, demonstrating a prominent peripheral palisading effect, with no evidence of retraction artifacts [Figure 2], [Figure 3]. The tumour cells were of the basaloid type, characterized by small sizes, scant cytoplasm, and hyperchromatic nuclei. Our initial differentials included Basal Cell Carcinoma (BCC) and Trichoepithelioma (TE).

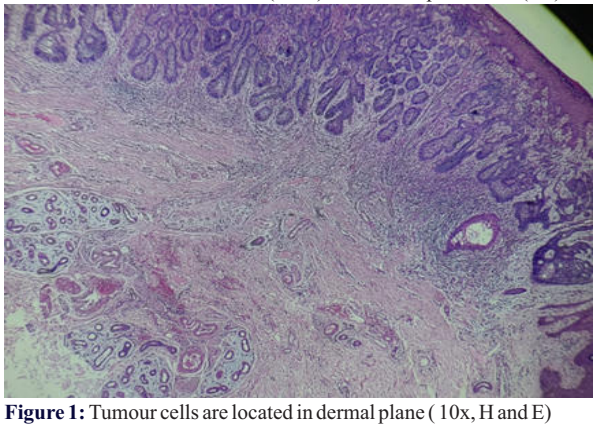

Figure 1: Tumour cells are located in dermal plane (10x, H and E)

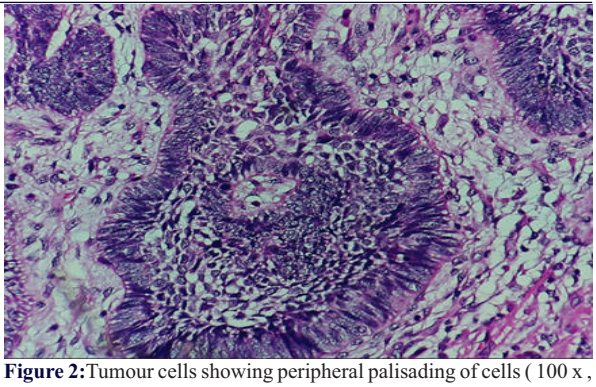

Figure 2: Tumour cells showing peripheral palisading of cells (100 x , H and E)

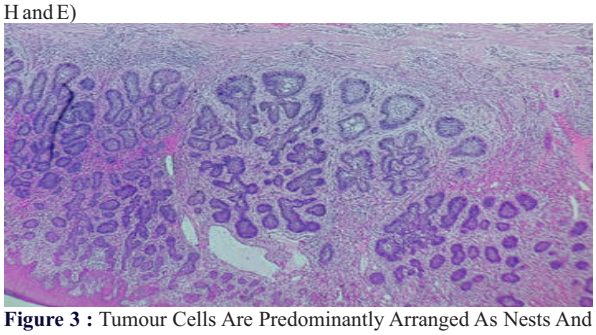

Figure 3 : Tumour Cells Are Predominantly Arranged As Nests And Sheets (40X , H and E)

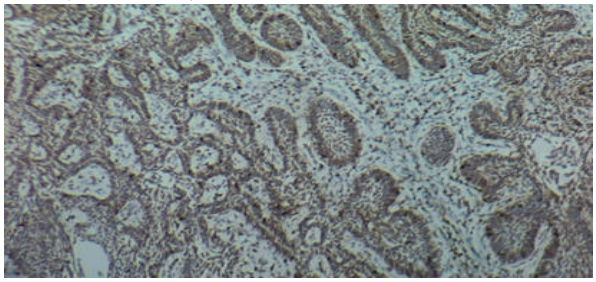

Figure 4 : Peripheral layer of tumour nest exhibiting diffuse cytoplasmic immunoreaction to BCL -2 (100 x)

Recognizing the varied histological features, we conducted an immunohistochemical study using CD10, BER-EP4, CD34 and BCL-2. The tumour cells were reactive to BCL-2 [Figure 4], while CD 10 and CD 34 showed only stromal reactivity. BCL-2 displayed diffuse cytoplasmic staining in the outermost proliferating layer of the tumour nests in our case(Figure 4). The study by Sabeti et al reported most TEs primarily exhibited peripheral layer reactivity, distinguishing them from the central or diffuse reactions seen in BCC.[3] CD10 demonstrated diffuse reactivity with stromal fibroblasts, while BER-EP4 did not react with the tumour nests in our case. The case series report by Mostafa et al predicted diagnostic accuracy of stromal CD10 reaction as 100% for TEs and 82.8% for BCC, reinforcing our findings of substantial stromal CD10 reactivity. [4] BER-EP4 is an antibody commonly used in the diagnosis of BCC and in our case the basaloid tumour cells did not show any reaction to BER-EP4 staining. Based on the aforementioned histological and immunohistochemical findings, a diagnosis of trichoepithelioma was established.

Trichoepitheliomas first described by Brooke in 1892 as "epithelioma adenoides cysticum," hence the common name "Brooke's tumour.". The cells are derived from follicular germinative cells and are commonly located on the face; however, they rarely involve the scalp, trunk, and extremities.[5] The importance of differentiating trichoepithelioma from other neoplastic and non-neoplastic skin lesions is underscored by this case, as accurate diagnosis ensures appropriate management and provides reassurance to the patient. Although usually asymptomatic and benign, awareness of its potential for misinterpretation as more aggressive lesions is crucial. While surgical excision remains an effective treatment approach, understanding the variable presentations of TEs can enhance diagnostic accuracy and minimize unnecessary invasive procedures. Furthermore, this case exemplifies the significance of comprehensive histopathological evaluation in clinical practice

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