

Squamous Cell Carcinoma arising in a Cutaneous Epidermal Cyst —A Case Report

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Abstract

Introduction: Cutaneous epidermal cysts are common lesions, but fortunately, malignant transformation of their epithelium is rare. There are only a few cases mentioned in recent literature, mostly occurring in epidermal cysts in the head and neck region. **Clinical Picture:** We present a case of malignant transformation in a long-standing buttock epidermal cyst, presenting a month after trauma to the cyst. **Treatment:** An excision biopsy and rotation flap was done. When the pathology was confirmed, a second resection was carried out and the defect covered with a free latissimus dorsi flap, a buttock rotation flap and a posterior thigh rotation flap. **Conclusion:** Although malignant transformation is rare, this case illustrates the importance of routine histology in excision of epidermal cysts.

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Introduction

Epidermal cysts are common benign subcutaneous lesions. Malignant transformation in epidermal cysts is a rare but recognised occurrence. Malignancy should be suspected in fast-growing lesions, recurrent lesions and in those with an atypical appearance. However, neoplastic transformation can also occur in long-standing lesions or in lesions without atypical clinical features, emphasising the need for routine histology of these lesions, despite the rarity of malignancy.

We describe a case of a man with an epithelial cyst, asymptomatic for more than 20 years, presenting with pain and swelling a month after trauma to the cyst. Biopsy showed a well-differentiated squamous cell carcinoma arising from an epidermal cyst. This is the second case reported in recent years to occur in a buttock epidermal cyst, the other cases having occurred in the head and neck region.

Case Report

A 57-year-old storekeeper had an asymptomatic mass over his left buttock for over 20 years. A month prior to hospital admission, he fell on his buttocks and the mass became painful and swollen. He was treated empirically

with antibiotics and the mass decreased in size with some relief of his symptoms. However, it did not resolve and he sought medical advice again.

On examination, the mass was a 6-cm diameter necrotic fungating mass with a foul-smelling discharge (Fig. 1). During the course of his hospital stay, he was noted to have occasional episodes of low-grade pyrexia. He was also newly diagnosed to have non-insulin dependent diabetes. As he had a history of pulmonary tuberculosis as a child (in the 1950s), a chest X-ray was done and sputum tested for acid-fast bacilli. He was otherwise well.

Differential diagnoses including tuberculosis and malignancy were considered and multiple superficial biopsies were taken. Histology showed no acid-fast bacilli, no malignancy, and acute-on-chronic inflammation. Computed tomography (CT) scans of the pelvis (Fig. 2) showed a large inflammatory mass with central necrosis and superficial ulceration. The degree of inflammation of the adjacent soft tissues was interpreted to be indicative of an inflammatory rather than a malignant process.

An excision biopsy was performed. Wide excision of the lesion with a margin of healthy skin left a defect of 10 x 8 cm. This defect was closed with double-opposing gluteal rotation flaps. Tissue culture confirmed that there were no

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acid-fast bacilli, but *Staphylococcus aureus* was grown from tissue culture, and methicillin-resistant *Staphylococcus aureus* from surface culture.

Histology showed an epidermal cyst with a large cavity filled with keratin and lined by thickened stratified squamous epithelium, focally communicating with the surface skin. Parts of the cyst wall appeared more proliferative, with solid, occasionally irregular, keratin-filled islands extending into the surrounding dermis, associated with chronic inflammation. Some of these islands contained cells with enlarged nuclei and distinct nucleoli. Focal invasion into the subcutaneous fat was seen. These findings are those of a well-differentiated squamous cell carcinoma, arising from the wall of a large keratin-filled epidermal cyst (Fig. 3).

As some of the deep margins were involved in the paraffin sections, re-excision was subsequently performed. The resultant defect after resection of the previous rotation flap measured 20 x 16 cm. A free latissimus dorsi flap was used, the thoracodorsal vessels being anastomosed end to end to the superior gluteal artery and vein. A buttock

rotation flap and a right posterior thigh flap closed the remainder of the defect (Fig. 4).

Metastatic workup with CT scans of the pelvis, abdomen and chest have been clear, and the patient has since been well with no local recurrence or distant metastases after 6 months.



Fig. 1. Appearance of cyst at first presentation.



Fig. 2. CT scan of pelvis.

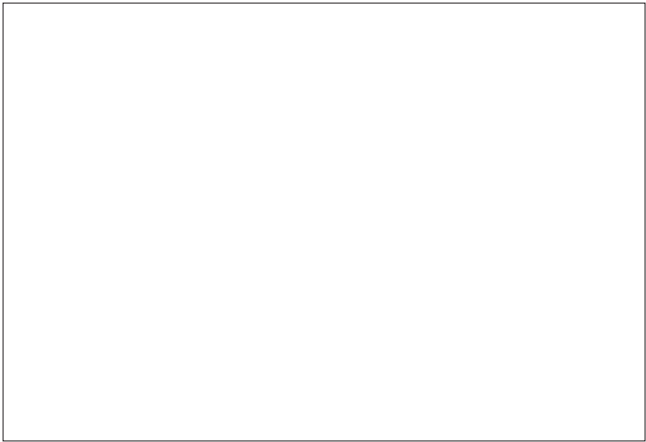


Fig. 3. Histology—epidermal cyst with squamous cell carcinoma arising from its wall (Haematoxylin and eosin, original magnification x40).

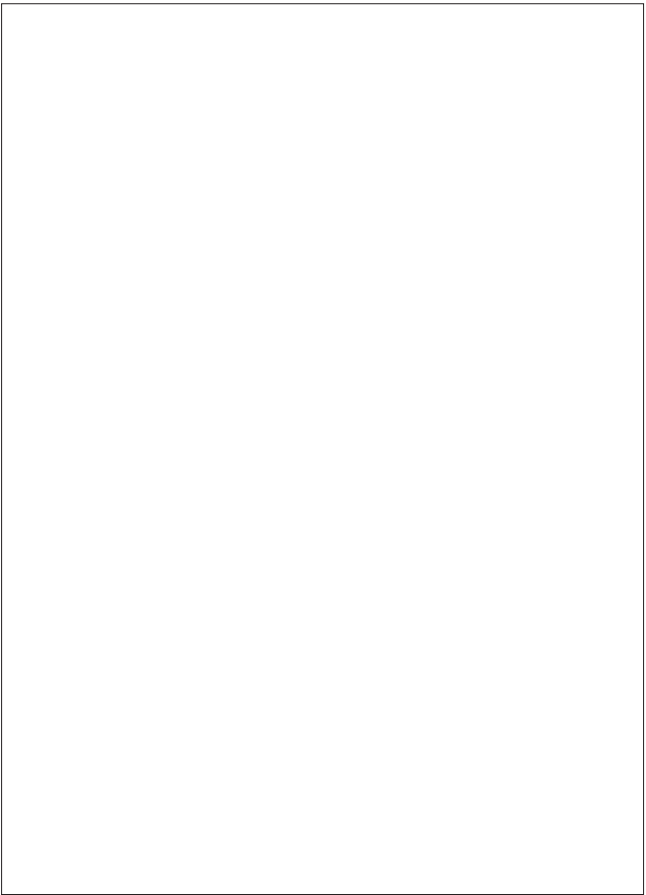


Fig. 4. Appearance 3 months after second excision and reconstruction with free latissimus dorsi, right buttock rotation flap and left posterior thigh flap.

Discussion

Squamous cell carcinoma is a rare occurrence in epidermal cysts. One series of 2485 epidermal cysts reported only 1 squamous cell carcinoma in an epidermal cyst.¹ Another reported 72 carcinomas in 3300 cysts.² There are a few detailed case reports of squamous cell carcinoma arising *de novo* in epidermal cysts.³⁻⁶ While squamous cell carcinoma is the most common malignancy reported, other malignancies have also been reported: basal cell carcinoma, Merkel cell carcinoma, Paget's disease, Bowen's disease and mycosis fungoides.¹

The older literature reports a higher incidence of malignancy: one series of 271 lesions identified 2 cases of basal cell carcinomas and 2 squamous cell carcinomas,⁷ while another series of 832 cases found an overall incidence of carcinoma of 1.7%.⁸ This is a much higher incidence than what was reported recently. However, the reliability of histological diagnosis in the cases reported in the older literature has been questioned,¹ mainly on the basis that neither detailed descriptions nor adequate illustrations are provided in these papers.

In this case, the unusual clinical feature is that it arose in an epithelial cyst, which had been asymptomatic for more than 20 years, and had then become symptomatic soon after an episode of trauma and subsequent infection of the lesion. It is probable that the trauma and infection brought the asymptomatic lesion to light more quickly, enabling the patient to benefit from early treatment. Given the short time interval between trauma and presentation of the lesion, it is less likely that the well-differentiated carcinoma arose due to the trauma and subsequent infection and inflammation occurring in the previously benign lesion. Such a case of squamous cell carcinoma arising in a traumatically induced epidermal cyst has been reported,⁹ but the time between trauma and excision biopsy of the lesion was significantly longer (12 years).

Most of the previously reported cases of squamous cell carcinoma arising in epithelial cysts occur in the head and

neck region.^{1,5,6} More recently, a similar case to ours was reported—involving a squamous cell carcinoma arising in an epidermal cyst in the buttock. However, this lesion had only a 6-month history and there was no history of trauma.³

Generally, it is agreed that malignancy should be suspected in cysts that have undergone change in character (increase in size, more pain, development of ulceration or discharge), and those with an atypical appearance or history of cyst recurrence. Wide excision of such lesions is recommended, and since malignancy has even been reported in cysts with no unusual clinical features to suggest malignancy, all epithelial cysts should be subjected to routine histology.

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