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CASE REPORT

Squamous Cell Carcinoma Arising on an Epidermal Inclusion Cyst: A Case Presentation and Review of the Literature

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KEYWORDS
Epidermal inclusion cyst;
Squamous cell carcinoma

Abstract
Epidermal inclusion cysts are very common lesions that very rarely undergo malignant transformation—in the English-language literature we have only found 18 adequately documented cases. We present the case of a man with a 2-month history of a retroauricular skin lesion in which histological study revealed squamous cell carcinoma arising on an epidermal inclusion cyst. Cysts that grow rapidly, reach a large size, ulcerate, develop a fistula, or that do not respond to medical treatment, and those that recur should be excised completely and histological study performed of the whole lesion.

PALABRAS CLAVE
Quiste de inclusión epidérmica;
Carcinoma epidermoide

Carcinoma epidermoide desarrollado sobre quiste de inclusión epidérmica cutáneo. Presentación de un nuevo caso y revisión de la literatura

Resumen
El quiste de inclusión epidérmica es una lesión muy común, siendo muy poco frecuente la transformación maligna del mismo. En la bibliografía en lengua inglesa solamente hemos encontrado 18 casos publicados que estuvieran adecuadamente documentados. Presentamos el caso de un varón con una lesión cutánea retroauricular de dos meses de evolución, cuyo estudio anatomopatológico mostró un carcinoma epidermoide que tenía su origen en un quiste de inclusión epidérmica. Los quistes de crecimiento rápido, aquellos que alcanzan gran tamaño, los que se ulceran, los que fistulizan y no responden al tratamiento médico y aquellos que presentan recurrencias deben extirparse completamente y estudiarse histológicamente en su totalidad.

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Introduction

Epidermal inclusion cysts and squamous cell carcinoma of the skin are very common lesions. There have been a number of reports of malignant and premalignant lesions arising in cutaneous epidermal inclusion cysts, including squamous cell carcinoma, Merkel cell carcinoma, basal cell carcinoma, Bowenoid papulosis, Bowen disease, Paget disease, and mycosis fungoides. There have also been reports of squamous cell carcinomas arising in noncutaneous epidermal inclusion cysts; this has occurred mainly in intracranial lesions, though also at other sites (precoccygeal, presacral, hepatic, splenic, and orbital). However, the association of epidermal inclusion cysts and squamous cell carcinoma in the skin is very rare. As malignant transformation is unusual and unexpected, it is recommended that large or rapidly growing cysts, those that ulcerate, and those that do not respond to medical treatment be completely excised and sent for histological study of the whole lesion. We present the case of a man with a retroauricular cystic lesion of the skin that had appeared 2 months earlier. Pathological study revealed a squamous cell carcinoma that had arisen in an epidermal inclusion cyst with no signs of dysplasia.

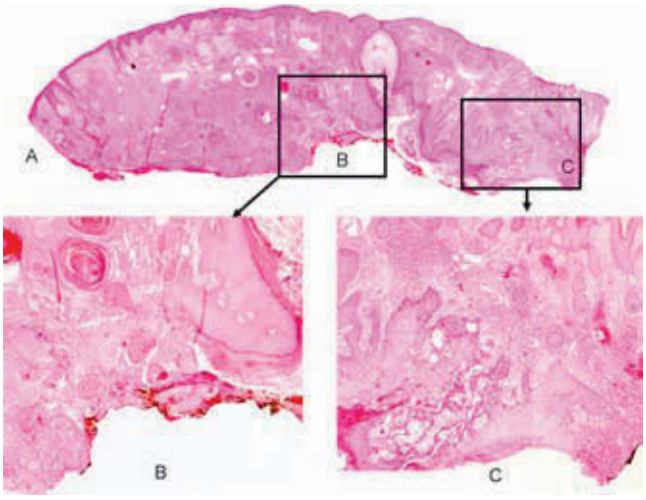

Figure 1 A, Full-thickness section of skin that shows the malignant transformation in the wall of the cyst in the deep margin and the fistulous tract in the center. No contact was seen between the tumor and the epidermis (Hematoxylin-eosin). B and C, Squamous cell carcinoma growing in the wall of the cyst, in contact with the deep surgical margin (Hematoxylin-eosin, ×2.5).

Case Report

The patient was a 65-year-old man who presented a fistulating cystic lesion that had appeared 2 months earlier in the right retroauricular-mastoid region. The lesion did not improve with antibiotic treatment and excision biopsy was performed in various fragments. Analysis of the biopsy was difficult due to the fragmentation of the material. However, one of the fragments contained a moderately differentiated, infiltrating squamous cell carcinoma on the walls of an epidermal inclusion cyst (Figures 1 and 2). The tumor had areas with a conventional pattern and others with an adenoid pattern; the change between the normal cyst wall and tumor was sharp, with no zone of dysplastic transition. The tumor was in contact with the surgical margins. Examination of multiple serial histological sections showed that the tumor did not arise from the epidermis. The other fragments were practically all of the tumor and showed no other relevant findings.

Reoperation was performed to extend the surgical margins, and microscopic examination only revealed persistence of microscopic tumor deposits.

Two months later, the lesion reappeared and the excision was repeated; histology findings were identical to those of the previous surgery and the surgical margins were once again involved.

Ten months later the tumor had regrown. It had the same characteristics and extended towards the mastoid process and external auditory canal. After repeat excision, pathology findings were identical to the previous occasions. The analysis was completed using immunohistochemistry for cyclin D1 (Neomarkers; clone: SP4, EnVision), p53 (Dako; clone DO-7, EnVision), and Ki67 (Dako; clone Mib-1; EnVision). All of the antibodies showed intense labeling within the tumor and no staining in the walls of the cyst. The border between the immunopositive and immunonegative regions was sharply defined, with no progressive transition between the 2 tissues.

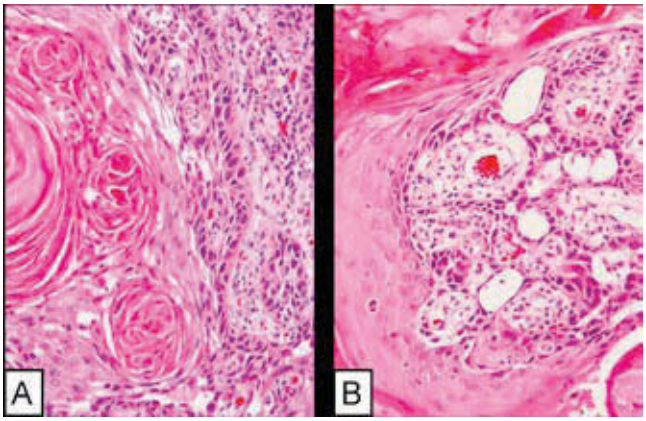

Figure 2 Squamous cell carcinoma. A, Conventional pattern (detail of Figure 1B). B, Adenoid pattern (detail of Figure 1C) (Hematoxylin-eosin, ×10).

Computed tomography (CT) showed involvement of the mastoid process and, in view of the difficulty for performing complete excision of the tumor, the patient was treated with radiotherapy, but no response was achieved.

Finally, 6 months later, radical resection of the auricle and of the mastoid process was performed (Figure 3), and the specimen was sent together with other small fragments of the mastoid bone for histological study.