ABSTRACT

Epidermal inclusion cyst (EIC) is one of the common conditions usually associated with trauma. This cyst commonly presents on the scalp, face, neck, trunk, and extremities. Epidermal inclusion cyst is believed to originate through implantation of epidermal element by either surgical or accidental trauma into deeper mesenchymal tissue and its subsequent cystic transformation. The EICs are indolent in nature, slow to progress, and remain asymptomatic unless secondarily infected. The authors report a case of EIC that occurred in a 35-year-old female after surgery of squamous cell carcinoma.

Keywords: Epidermal inclusion cyst, Epidermoid cysts, Mesenchymal tissue.

INTRODUCTION

Epidermal inclusion cysts are rare, slowly growing, benign, and developmental or acquired cysts which are derived from abnormally situated ectodermal tissue. The terminology and nomenclature of EIC is numerous, which includes epidermal cyst, epithelial cyst, keratin cyst, follicular infundibular cyst, seborrheic cyst, milia, and so on. The mainly reported cases are from the sites of face, trunk, neck, extremities and the scalp, genitals, behind the ear, fingers, palm, and soles. About 7% of them are located in the maxillofacial region.

The EIC arises from traumatic implantation of epithelium or entrapment of epithelial remnants during embryonic fusion or by the surgical trauma. The EIC is described as a dermal cystic enclosure of keratinizing squamous epithelium that is filled with keratin debris. The EIC usually presents as a firm, slow-growing, smooth, freely movable, painless mass or lump underneath the skin at the subcutaneous dermal level, with an intact skin surface but no apparent drainage point. It is indolent in nature, slow to progress, and remains asymptomatic, unless secondarily infected. It contains soft, cheesy-like skin secretions. The EICs are approximately twice as common in males than females, can occur at any age, but the third and fourth decade is the most common. Epidermoid cysts are the part of features of certain syndromes like Gardner syndrome, basal-cell nevus syndrome, pachyonychia congenita, which do not demonstrate cysts of the oral mucosa, but facial cysts may occur. They are treated by simple pericapsular excision.

In the present study, we report a case of EIC, at surgically operated site of oral squamous cell carcinoma in left cheek region, whose features were rather unusual, in that, it presented as a painless fixed swelling, yellowish black in color, associated with foul smell mimicking an infection.

CASE REPORT

A 35-year-old female patient presented with swelling over left cheek area of face since 2 months (Fig. 1). It had gradually increased to the present size measuring approximately 2 × 1 cm. The patient gave the history of surgery of oral squamous cell carcinoma 9 months back in the same area. The lesion was a diffuse swelling over the left cheek, yellowish black in color with irregular overlying surface. The swelling was tender and firm on
palpation. A provisional diagnosis of furuncle of left cheek area was given.

Excisional biopsy of lesional tissue was performed. Gross specimen comprised a single bit of rhomboidal-shaped soft tissue, yellowish black in color having irregular surface, firm in consistency, and approximately measuring 1.8 × 1.2 × 0.6 cm in size (Fig. 2). Histopathologically, hematoxylin and eosin (H&E)-stained soft tissue section showed a cystic lumen with abundant keratin flakes lined by orthokeratinized stratified squamous epithelium of varying thickness having a distinct granular cell layer. The connective tissue capsule showed dense collagen with the subepithelial layer of chronic inflammatory cells. There was a transition from normal skin to lesional tissue. No evidence of malignancy was seen in the present section. The histopathological features confirmed the diagnosis of EIC.

DISCUSSION

The epidermal cyst is indolent, slow to progress, and asymptomatic unless secondarily infected. The oral cavity involves about 1.6% of cases, mainly in the soft tissue of the tongue and floor of mouth. The size of the cyst varies from 1 to 5 cm in diameter. Epidermal inclusion cysts usually presents as a firm, slow-growing, smooth, freely movable, painless mass or lump underneath the skin at the subcutaneous dermal level, with an intact skin surface but no apparent drainage point. They contain soft, cheesy-like skin secretions. Rarely, it may cause secondary malignancy like basal cell carcinoma, Bowen’s disease, squamous cell carcinoma, and even mycosis fungoides. The EICs are twice as common in men as in women. Epidermoid cysts are benign lesions, characterized by cystic spaces lined by simple squamous epithelium (epidermoid cyst), containing skin adnexa (“true” dermoid cyst) or tissues of all three germ layers (teratoid cyst). On H&E examination, the cystic lining is composed of stratified squamous epithelium with glandular differentiation. The lining is filled with desquamated keratin and disposed in a laminar pattern. In the capsule, dystrophic calcification and reactive foreign body reaction are present. Our study showed a cystic lumen with abundant keratin flakes (Fig. 3) lined by orthokeratinized stratified squamous epithelium of varying thickness, with a distinct granular cell layer (Fig. 4). The connective tissue capsule showed dense collagen with the subepithelial layer of chronic inflammatory cells. The lesional tissue showed transition into normal skin on either side. No malignancy was seen in the present section. The histopathological features confirmed the diagnosis of EIC.

Treatment modalities include incision and drainage but the recurrences are frequent if the keratin is not removed. The more definitive treatment of choice is surgical excision. The complications of EIC are the risk of scarring and recurrence. Malignant transformation of epidermoid cyst into cutaneous squamous cell carcinoma.

Fig. 2: Surgically enucleated specimen

Fig. 3: H & E stained soft tissue section shows a cystic lumen with abundant keratin flakes, lined by orthokeratinized stratified squamous epithelium of varying thickness. (100x)
range from 0.011 to 0.045%. In our case, surgical excision was done and a 7-month follow-up showed no recurrence.

**CONCLUSION**

The EIC arises from epidermal inclusion secondary to postoperative trauma, which results in implantation and proliferation of squamous epithelium into the dermis. So care has to be taken to excise it *in toto*, along with the overlying skin and the punctum involved, in order to prevent recurrences from the residual keratin-producing lining of these cysts and to prevent possible malignant transformation.

**REFERENCES**