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Case Report

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Gingival Epidermal Inclusion Cyst– A Rare Entity with Literature Review

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1. Abstract

Epidermal inclusion cysts or epidermoid cysts are benign cystic lesions rarely occurring in the oral cavity. These cysts represent less than 0.01% of all oral cavity cysts. Most commonly involved location in the oral cavity is the floor of mouth. We report a rare case of an epidermal inclusion cyst in an elderly female involving the mandibular gingiva, with a brief review of the literature.

2. Introduction

Epidermal Inclusion Cysts (EIC) are the most common cutaneous cysts which are known by numerous synonyms like an epidermoid cyst, epidermal cyst, infundibular cyst, inclusion cyst, and keratin cyst. These are also referred to as sebaceous cysts at times, however, the term is a misnomer as it does not involve the sebaceous gland. Instead, epidermoid cysts develop within the infundibulum as subcutaneous nodules directly underneath the patient's skin and often have a visible central punctum. These cysts arise along the lines of embryonic fusion. Although most commonly affecting the face, neck, trunk, these cysts can occur anywhere on the body. Of all the epidermoid cysts encountered throughout the body, only 7% occur in the head and neck area, with the oral cavity accounting for only 1.6%. Epidermal cysts are rare tumours falling under the spectrum of teratomas, with the absence of skin appendages within their squamous epithelium lined walls. In the oral cavity, these cysts tend to occur most commonly in the floor of the mouth (<0.01%). [1-4] We present an unusual case of Epidermal Inclusion Cyst involving the mandibular gingiva. To the best of our knowledge, this appears to be the fifth case involving gingiva being documented in the literature.

3. Case Report

A sixty-eight-year-old female presented to the outpatient department with a complaint of swelling left lower jaw for 6 months. There was no associated history of trauma/ bleeding from gums/ tooth loss. Intra-oral examination revealed a well-defined swelling in relation to left lower incisors and canine measuring approximately 1.5 cm in greatest dimension. Overlying mucosa appeared normal (Figure 1). On palpation, it was a firm to hard swelling present on the buccal aspect of teeth, slightly tender and the teeth were vital. A provisional diagnosis of mucous retention cyst was made. The patient underwent Fine Needle Aspiration Cytology (FNAC) which showed sheets of nucleated squames, inflammatory cells including foamy histiocytes and mucoid material, features suggestive of Benign Cystic Lesion (Figure 2A, B). The patient was planned for curative excision of the lesion considering its likely benign origin. Excisional biopsy was performed by excising the entire cystic lesion and scraping the wall of the cystic lesion. Primary closure was done after achieving haemostasis and the healing was uneventful.

The excised specimen was sent for histopathological examination. The specimen consisted of a rounded tense grey white to pale cystic mass measuring 1.5x1x0.5 cm. Histopathological sections showed a benign cyst lined by stratified squamous epithelium with granular layer but no rete ridges and cavity was filled with keratinous debris with nucleated and a nucleated squames admixed with mixed inflammatory cells. The features were consistent with

Epidermal Inclusion Cyst (Figure 3A, B). The patient did well postoperatively, and no recurrence was noticed at the two-month follow-up.

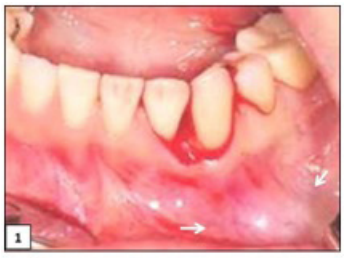

Figure 1: Intra-oral photograph showing swelling in mandibular gingiva

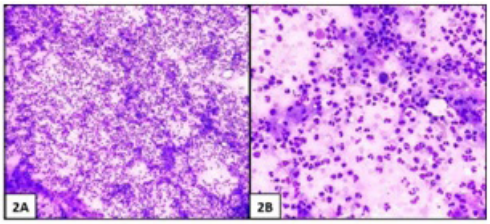

Figure 2: Photomicrograph of FNAC smears showing nucleated squames, inflammatory cells and mucoid material (A- Giemsa-100x; B- Giemsa- 400x)

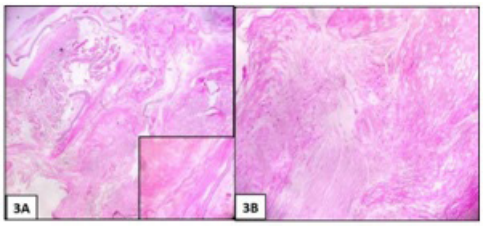

Figure 3:
A) Photomicrograph showing benign cyst lined by stratified squamous epithelium (HE- 40x; Inset: HE- 100x)
B) Photomicrograph showing cyst filled with keratinous debris with nucleated and a nucleated squames admixed with inflammatory cells. (HE-400x).

4. Discussion

Epidermal Inclusion Cysts are rare, benign lesions found throughout the body, with around 7% occurring in the head and neck region, 1.6% of which occurs in the oral cavity. Of all the oral cysts, these cysts account for only 0.01%. Roser was the first one to describe EIC of the floor of the mouth in the oral cavity. New and Erich (1937) reported 24 (1.6%) epidermoid cysts occurring at the floor of the mouth out of 1495 cases of dermoid cysts seen at the Mayo Clinic. In the present case, cystic lesion was involving the buccal aspect of gingiva of the mandibular teeth. To the best of our knowledge, only five such cases involving gingiva have been reported in the previous literature [1-5].

According to previous literature, in terms of sex predilection, most authors found a significant predominance of occurrence in males compared to females (3:1) in 2nd to 4th decades of life. However, in the present case being discussed, the patient is a female in the sixth decade of life [3-5].

The size of these cysts can range from a few millimetres to several centimetres in diameter as was in our case.

In 1955, Meyer described three variants of teratoid cysts; (1) EIC always lined by stratified squamous epithelium without dermal appendages within the underlying connective tissue. (2) Dermoid cyst, in addition to typical squamous epithelium, contains dermal appendages such as hair, hair follicles, sebaceous and sweat glands. (3) Teratoid cyst wall is lined with squamous epithelium and consists of tissues from all the three germ layers, such as respiratory, gastrointestinal and nervous system. The lumen of all three types of cysts displays greasy, cheese-like, white-grey content formed by shed keratin and secreted material [1].

These cysts can be primary or secondary. Primary epidermal cysts arise directly from the infundibulum of the hair follicle. Plugging of the follicular orifice allows for cyst formation. The cyst often communicates with the surface of the skin through a small orifice or visible central punctum. Patients suffering from acne vulgaris have a higher rate of hair follicle disruption and pore blockages leading to a higher rate of epidermal inclusion cyst formation from pre-existing comedones. Secondary epidermoid cysts can arise after the implantation of the follicular epithelium in the dermis due to trauma or comedone formation. Epidermoid cysts are lined with stratified squamous epithelium with the accumulation of keratin in the core.

Imaging plays an important role to delineate cystic masses from solid lesions and to assess the luminal content. In cases of EICs, located in surgically inaccessible areas such as floor of the mouth, uvula, temporomandibular joint, jaws, temporal region, intracranial, orbit, Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) allows more precise localization, anatomic extension and topographic relation. This helps in preoperative diagnosis and enables the surgeon to choose the most appropriate surgical approach [5-7].

The differential diagnoses for localized gingival masses comprise pyogenic granuloma, peripheral ossifying fibroma, peripheral giant cell granuloma, irritational fibroma and others.

Histologically, EICs are lined stratified squamous epithelium. Histological examination reveals an epithelial-lined cyst filled with laminated keratin located within the dermis. The lining of the cyst is similar to the surface epithelium but differs in that it lacks rete ridges. A granular layer is present that is filled with keratohyalin granules. The similar histopathological picture was present in the case being discussed [4,6,7-8].

The definitive treatment is the complete surgical excision of the cyst with its walls intact; this will prevent reoccurrence. Excision is best accomplished when the lesion is not acutely inflamed. During the period of acute inflammation, the cyst wall is friable, and the planes of dissection are more difficult to appreciate, making complete excision less likely and increasing the rate of reoc-

currence. Although malignant transformation has been considered to be extremely rare for head and neck EICs, a few cases have reported carcinomatous changes in ovarian, cutaneous and intracranial EICs. There is no data regarding such malignant change in the gingival EICs. These cysts have an excellent prognosis after complete excision of all contents and the cystic wall [1,3,7].

5. Conclusion

Epidermal Inclusion cyst of the oral cavity is an uncommon entity, especially in the gingiva. Ample understanding and vigilance about this slow-growing painless mass is essential and it should be considered in the differential diagnosis of benign gingival swellings.

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