

Squamous Odontogenic Tumour- A Case Report

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Abstract:

The squamous odontogenic tumor (SOT) is a rare, benign, locally infiltrative neoplasm of the jaws. SOT was first described by Pullon *et al.* (1975). According to Karmar *et al.* squamous odontogenic tumor seems to derive from the cell rests of Malassez in the periodontal ligament space, gingival surface epithelium or from remnants of the dental lamina. The tumor is often asymptomatic, although it can present with symptoms of pain and tooth mobility. The characteristic radiographic appearance is that of a triangular-shaped unilocular radiolucency associated with the roots of erupted, vital teeth and has a predilection for the anterior maxilla and the posterior mandible. The challenge is in diagnosing the tumor because of its close resemblance to acanthomatous ameloblastoma and desmoplastic ameloblastoma. Treatment involves local excision and curettage. We report a case of SOT in a 34 years old female in canine-premolar region of the maxilla.

Keywords: Squamous Odontogenic Tumor, Maxilla, Cell rest of Malassez.

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INTRODUCTION:

Squamous odontogenic tumour (SOT) is a lesion which had been recognized as an apparent entity for a number of years until 1975, when Pullon and co-workers published a series of six cases.^[1] SOT has been defined as a benign but locally infiltrative neoplasm consisting of islands of well-differentiated squamous epithelium in a fibrous stroma. The epithelial islands occasionally show foci of central cystic degeneration. ^[2] the most common site of occurrence of the lesion in the mandible is the bicuspid-molar region and in the maxilla, incisor-cuspid area. The challenge is in diagnosing the tumor because of its close resemblance to acanthomatous ameloblastoma and desmoplastic ameloblastoma. ^[3] We report a

case of SOT in a 34 years old female in the canine-premolar region of the maxilla with aggressive behaviour clinically.

Case Report

A 34-year-old female patient reported to our dental hospital with a complaint of swelling and mobility of teeth in the right maxillary anterior region since one year. Extraoral examination revealed a mild swelling over the right anterior maxilla [Fig.1 a]. Intraoral, a diffuse, firm, non-tender swelling was noted in the buccal vestibule extending from the region of the right maxillary lateral incisor to second premolar [Fig.1 b]. A diffuse swelling was also noted on the palatal aspect. The right maxillary first premolar was mobile. The overlying mucosa appeared normal. Panoramic radiograph showed a triangular lesion interdentially between

13 and 14. Superiorinferiorly it appeared to extend from the floor of nasal fossa to the cervical region of 13 and 14. Borders were well defined. Interior of the lesion showed a multilocular appearance with the presence of a coarse trabecular pattern. The lesion caused splaying of the roots of 13 and 14 with resorption on the mesial aspect on 14 [Fig 2 a]. Additional CT scan findings revealed that the lesion extended into the right maxillary sinus and obliterated it. The right nasal fossa was also encroached upon and obliterated. Buccal as well as palatal cortical expansion and perforation was seen. Orbital floor also appeared to be affected. [Fig. 2 b] From clinical and radiographic findings a diagnosis of locally aggressive tumor most likely ameloblastoma was made and the lesion was subjected to histological examination. Histological examination revealed a proliferation of mature rounded and broad based stratified squamous epithelial islands scattered randomly in a dense fibrous connective tissue stroma. [Fig.3a] the peripheral cells of islands were flattened and darkly stained and the lumen filled with squamous cells. [Fig.3b] from the histological findings a diagnosis of squamous odontogenic tumor was made and the lesion was excised completely. Follow up on 1 month, 3 months, 6 months, 1 year & 5 years was uneventful.

Discussion

Squamous odontogenic tumor is a rare benign odontogenic neoplasm that was first described in 1975 and is now recognized as a distinct identity. Before 1975, this lesion was probably believed to represent an atypical acanthomatous ameloblastoma or even a squamous cell carcinoma. [3]

Histogenesis of squamous odontogenic tumor may be varied. Lesions that are associated with the lateral root surface or teeth arise from the cell rests of Malassez. Those associated with the crown of unerupted or impacted tooth arise

from the dental lamina. Surface stratified squamous epithelium and cell rests of serres have been cited as the sources of the extraosseous variant. [4] In our case, there is a possibility of histogenesis seems to be cell rests of Malassez.

SOT is known to occur in a wide age range, from the first decade to eighth decade of life, with the mean age of occurrence of 38.2 years. The gender ratio as 1:1.8 (F: M) showing slightly more predilection among males. In our case the lesion was seen in a 34 year old female patient. In the maxilla, the lesions centred on the incisor-cupid area, whereas in the mandible the lesions had a predilection for the premolar-molar area. However, several cases exhibited multiple site involvement, including maxillary and mandibular involvement in the same patient. No cases were confined to areas of the jaw outside the alveolar process. [5,6] Leider *et al.* reported a rare familial tendency for this neoplasm. [7] SOTs occurring in the maxilla were found to be more aggressive than in mandible. [2] This was mainly due to the anatomy, porous and medullary nature of the bone. [8] In our case, the lesion was seen in the canine-premolar region.

Radiograph of common central variant of SOT shows a well-defined unilocular, triangular radiolucency between the roots of adjacent teeth. Root resorption and radio-opacities seen in other odontogenic neoplasm is seldom a feature of SOT. Large and extensive SOTs may, however, show multilocular pattern. Root resorption was noticed in only one case. [9] In our case multilocular pattern with root resorption was noted in the canine-premolar region. The peripheral variant may cause some saucerization of underlying bone. This was likely to be a pressure phenomenon rather than the result of true tumor infiltration. [10]

Histologically, the squamous odontogenic tumor is composed entirely of islands of benign squamous epithelium in mature connective

tissue stroma without a peripheral palisaded nuclei or polarized columnar layer, or stellate reticulum. This peripheral layer is usually quite flattened or at least cuboidal. The squamous cells are very uniform and exhibit no pleomorphism, nuclear hyperchromatism or mitotic activity. Occasionally, individual cell keratinization is present but no epithelial pearls.^[6] Microcyst vacuolization and individual cell keratinisation within the epithelial islands are common features. The epithelial islands of SOT seem to resemble the squamous metaplasia seen in ameloblastoma; however, the lack of peripheral columnar cells and palisading nuclei establishes the differential diagnosis between these two tumors. Laminated calcified bodies and globular eosinophilic structures, which do not stain for amyloid, are present within the epithelium in some cases.^[5]

Histopathologically often the islands are rounded or oval, but they may also reveal irregular or cordlike structures as is characteristic for desmoplastic ameloblastoma and hence must be differentiated from same.^[11] Treatment of SOT involves conservative local excision, curettage, enucleation, and scaling of adjacent teeth. Recurrences have been reported in only one case, most likely due to insufficient initial removal. SOT could transform into a malignant disorder such as intraosseous squamous cell carcinoma.^[6, 11]

Squamous odontogenic tumour an uncommon lesion is a benign odontogenic neoplasm probably arising from the cell rests of Malassez. Care should be taken not to misdiagnose this condition as acanthomatous ameloblastoma or well differentiated squamous cell carcinoma as the treatment in these lesions is much more radical as compared to the SOT. Although, it has an infiltrative pattern of growth, squamous odontogenic tumor has become accepted as a distinct lesion rather than a variant of

ameloblastoma. Treatment should be by conservative excision.

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Fig 1 a: Extra-oral photograph showing swelling on right side of face.



Fig 1 b: Intra-oral picture showing Swelling in right buccal vestibule extending from 12 to 15

Fig 2 a: Panoramic radiograph showing triangular lesion between the divergent roots of right canine and first premolar.

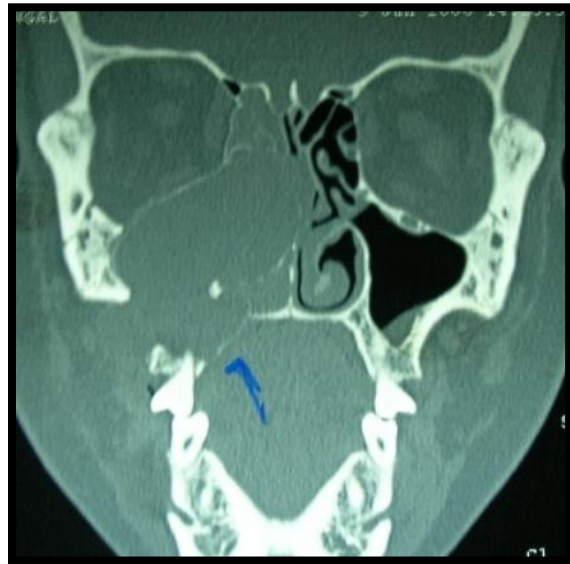


Fig 2 b: CT Scan showing extension of lesion into right maxillary sinus, right nasal fossa and orbital floor with buccal and palatal cortical plate expansion.

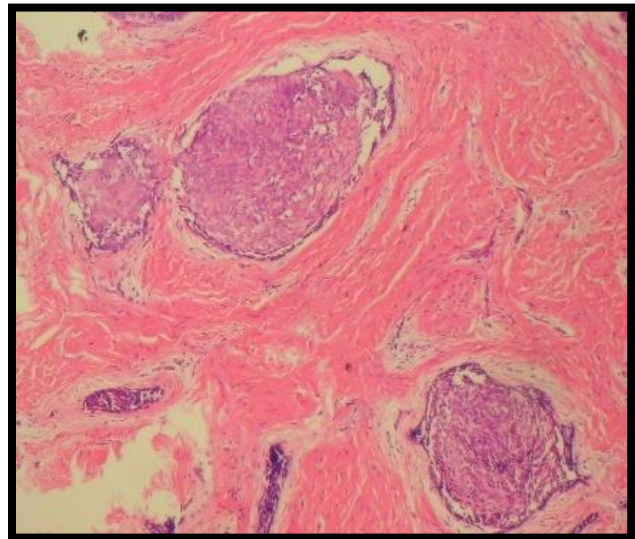


Fig 3 a: Photomicrograph showing scattered islands of mature squamous epithelium in dense mature connective tissue.



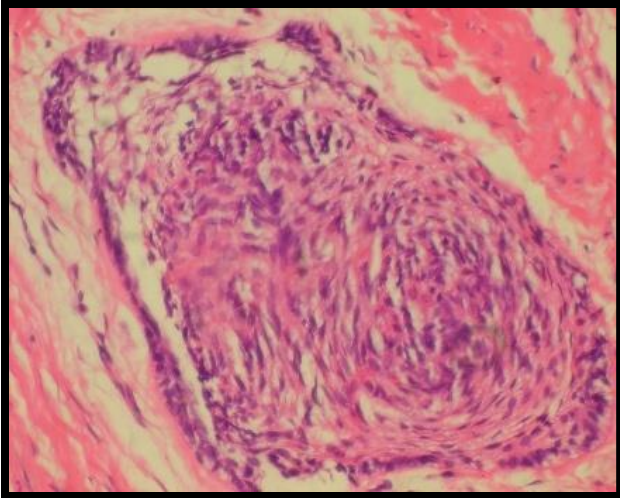


Fig 3 b ; photomicrograph showing (40X view) rounded and board mature squamous island with flattened peripheral cells with lumen filled squamous cells.

Figure legends:

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Fig 2 b: CT scan showing extension of lesion into right maxillary sinus, right nasal fossa and orbital floor with buccal and palatal cortical plate expansion.

Fig 3 a: Photomicrograph showing scattered islands of mature squamous epithelium in dense mature connective tissue.

Fig 3 b: photomicrograph showing (40X view) rounded and board mature squamous island with flattened peripheral cells with lumen filled squamous cells.