

CALCIFYING EPITHELIAL ODONTOGENIC TUMOR: A CASE REPORT

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ABSTRACT

Calcifying epithelial odontogenic tumor (CEOT) is a rare odontogenic tumor, accounts 0.4% to 3 % of all odontogenic tumors arising from odontogenic epithelium. Dr. Jens Jorgen Pindborg first described this unusual lesion; subsequently Shafer et al coined the term Pindborg tumor. It occurs most commonly in the 4th to 6th decade and bears no gender predilection. A case of CEOT in a 55 years old female extending from the mesial aspect of right lower canine to the contralateral third molar region is described.

KEY WORDS

CEOT, Pindborg tumor, Hemimandibulectomy.

INTRODUCTION

Calcifying epithelial odontogenic tumor (CEOT) is a rare odontogenic tumor arising from

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odontogenic epithelium¹. It was first described by Jens Jorgen Pindborg in 1955². Shafer et al³ give Pindborg tumor eponymously. CEOT is very uncommon and accounts 0.4% to 3 % of all odontogenic tumors⁴. Most CEOT are seen in the fourth to sixth decade of life⁵. CEOT is considered as benign but locally aggressive

in nature with recurrence rate of 10-15%⁶. CEOT occurs as a single, painless, gingival mass resembling oral hyperplastic mucosal lesion⁷. Radiographically, CEOT are unilocular or multilocular radiolucent areas with patchy radio-opacity. Histologically, it consists of polyhedral odontogenic epithelial cell cords, interspersed with extracellular amyloid^{4,8}.

CASE REPORT

A 55-year-old female patient came to the Department of Oral & Maxillofacial Surgery, Sardar Begum Dental College, Peshawar with a chief complaint of slowly progressive swelling on the left side of her lower jaw for the last 12 years. On intra-oral examination, the left lower buccal and lingual vestibule was obliterated due to the expansion of the buccal and lingual cortical plate. The lesion was seen extending from central incisor to the contralateral third molar, measuring approximately 8×4 cm in size (Figure.1). On palpation, the swelling was slightly tender, firm, smooth and painless.

Figure # 1: Intra-oral aspect of the lesion characterized by firm, smooth swelling obliterating buccal and lingual vestibule on the left side of the mandible.



Orthopantomograph revealed a mixed radiolucent-radiopaque lesion, which was multilocular with coarse trabeculae and scattered foci of calcification extending from the mesial aspect of right lower canine to the contralateral third molar region and measuring approximately 9×4 cm in size (Figure.2). Inferiorly, the lesion was extending till the lower mandibular margin and there is discontinuity in the lower border of mandible.

Figure # 2: Orthopantomograph revealing large radiolucent-radiopaque lesion



An incisional biopsy of 0.5cm×0.2cm×0.1cm from the region involved was sent for histopathological examination. Sections showed sheets and polyhedral eosinophilic squamous epithelial cells, pleomorphic cells with 2-3 nuclei and few amyloid bodies, diagnosing the lesion to be CEOT. In view of the extensive involvement, resection of the involved portion of the mandible and reconstruction with a reconstruction plate was planned. The mandible was exposed via an extraoral approach through lip split technique and resection of the left hemimandible from right canine to the left third molar with safe clinical margins was performed (Figure.3 and 4) and defect was bridged with reconstruction plate (Figure.5). The resected specimen was measuring 9.5×4.5×5cm (Figure.6).

Figure # 3: Exposing the lesion through extra-oral lip split technique.



Figure # 4: Resection of the left hemimandible from the right canine to contralateral third molar with safe clinical margins.



Figure # 5: The defect was bridged with reconstruction plate.



Figure # 6: The resected specimen measuring 9.5*4.5*5cm.



DISCUSSION

CEOT is a rare benign but locally aggressive tumor and the lesion is a distinct entity and probably represents less than 1% of all odontogenic tumors. The CEOT is more common between 3rd and 6th decade of life³ which support the present case. There is no gender predilection. About half of the cases of CEOT are associated with an impacted tooth, usually with a mandibular molar tooth⁹. The tumor grows slowly by infiltration, painless and producing cortical expansion as seen in the case reported. The radiographic appearance of CEOT is variable and depends on the stage of development. It ranges from unilocular, pericoronal, radiolucency, pericoronal radiolucency with irregular calcific flecks, mixed radiopaque-radiolucent lesion, driven-snow appearance to an entirely radiopaque mass¹⁰. Histopathologic feature usually show islands and strands of polyhedral epithelial cells with nuclear pleomorphism, prominent nucleoli and intercellular bridges^{4,5}. One of the characteristic microscopic features of this tumor is the presence of amorphous, eosinophilic hyalinized and acellular areas resembling amyloid within or adjacent to epithelial islands^{4,11}. These epithelial islands and amyloid-like materials were seen in our case also. Numerous treatment modalities have been suggested and the treatment plan is dependent size and location of lesion, general condition of patient and operator skill. Large tumors require aggressive approach by segmental resection, hemimandibulectomy and hemimaxillectomy, which cause bone discontinuity requiring reconstruction procedures^{4, 12}. Recurrence rate of 10-20% following conservative treatment is reported¹³.

CONCLUSION

CEOTs are uncommon odontogenic tumors. Being a locally aggressive tumor, resection with adequate normal margins is mandatory when treating large lesions to prevent its recurrence. Proper reconstruction of the bony defect and subsequent follow-ups are required to decrease the morbidity associated with large tumors.

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