

## Calcifying Epithelial Odontogenic Tumor of the Mandible

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**Received:** February 27, 2017; **Published:** March 31, 2017

### Abstract

The calcified epithelial odontogenic tumor (CEOT), also known as Pindborg tumor, is a rare benign but locally aggressive lesion. Usually this tumor is located in the molar - premolar region of the lower jaw. There is no sex predilection and the lesion most frequently occurs during the fourth and fifth decade of life.

**Keywords:** *Calcified Epithelial Odontogenic Tumor; Mandible*

### Introduction

The calcifying epithelial odontogenic tumor (CEOT), also named Pindborg tumor after the pathologist who described it in 1955 [1,2], is an uncommon benign, locally invasive tumor. It usually involves the premolar-molar area of the mandible [2-4], there is no sex predilection [5,6] and the peak incidence is found between the fourth and fifth decade of life. Also, a peripheral soft tissue variant of the lesion has been described as well as a malignant one [7,8].

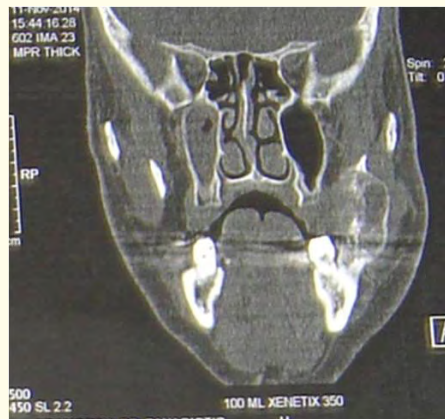
### Case Report

A 76-year-old Caucasian male patient, presented to the out-patient department complaining of a swelling in his lower left jaw. The mass was painless, increasing slowly in size, causing lately difficulty in mastication.

Extraoral examination showed slight fullness and asymmetry of his lower left face. There was no cervical lymphadenopathy clinically. Intraorally, the lesion firm in palpation, occupied the left mandible from the second molar to the ascending ramus with expansion of the lingual and buccal plates. The inferior alveolar nerve was unaffected. The orthopantomogram revealed a mixed radiopaque-radiolucent endosseous lesion of the left mandible extending from the second left lower molar to the ascending ramus. An embedded third molar was also present (Figure 1). The CT scan images depicted an intraosseous lesion causing expansion of the mandible in all directions, erosion of both plates and lingual extraosseous extension (Figure 2).



**Figure 1:** OPG depicting the mandibular ramus lesion.



**Figure 2:** Axial CT scan depicting the extend of the bony lesion.

The diagnosis of CEOT tumor was confirmed by an incisional biopsy. Under general anesthesia, via a submandibular approach, a left segmental mandibulectomy, behind the first molar and including the condylar head, was performed (Figure 3).



**Figure 3:** Surgical specimen.

Reconstruction was achieved using a 11-hole-reconstruction plate with an adjustable condylar head (Figure 4). The postoperative period was uneventful. The patient, free of disease, for 3 years, is regularly seen in a out-patient basis.



**Figure 4:** Second postoperative day OPG.

**Histopathology Report**

The tumor composed of closely packed polyhedral epithelial cells, in a scanty fibrous often hyalinized stroma. The epithelial cell frequently had nuclear pleomorphism, anisonucleosis and hyperchromatism. The mitotic activity was minimal or absent. The intracellular rounded masses of tumor filled with eosinophilic homogenous material become progressively calcified.

**Discussion**

CEOT is a rare benign lesion representing less than 1% of all odontogenic tumors [3]. No more than 150 cases have been reported in the English literature. The histogenesis of the CEOT tumor remains controversial. Origin from the reduced enamel epithelium, stratum intermedium, rest of dental lamina and basal cells of the oral epithelium have been proposed [6,9,10]. The clinical presentation depends on the site of involvement but typically is that of a slowly enlarging mass causing expansion of the cortical plates, without pain or alter sensation [1,7,8,10]. The radiographic appearance [1,10] is no characteristic. Early tumors may appear radiolucent. As the tumor matures, areas of calcification develop. The lesion maybe unilocular or multilocular with mixed radiolucent- radiopaque picture, giving occasionally the “soap bubble” appearance. The presence of an impacted crown [3,4] may or may not be a feature. CT scan images maybe helpful in delineating the extend of the tumor, the involvement of cortical plates, basal bone and extraosseous extension. Ameloblastoma, calcifying follicular cyst and malignant CEOT should be considered in the differential diagnosis of Pindborg tumor [4,5,11]. Definite diagnosis is based on histological examination [5,12]. CEOT is managed surgically. The tumor is not encapsulated and most authors agree that the resection should include a safe margin of clinically and radiographically healthy bone [1,10]. CEOT is a rare lesion and large series with follow-up are lacking. Consequently, treatment policy and recurrence rate are still debatable although most authors agree that 1 cm of safe margins are adequate [1].

**Conclusion**

The case we have presented is a typical CEOT besides the age of the patient. Planning the surgery and the rim of healthy bone to be excised it might be wise an effort to be made to preserve the continuity of the mandible and minimize the extend of healthy bone excision.

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**Volume 9 Issue 1 March 2017**

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