

Multiple Central Odontogenic Fibromas: A Case Report

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ABSTRACT

Background: Central odontogenic fibroma(COF) is an uncommon benign odontogenic tumor occurring in jaw bones. It is a tumor of ectomesenchymal origin with slight female predominance, occurring either in maxilla or mandible. Radiographically it appears as a unilocular lesion resembling dentigerous cyst. Histopathologically it shows dense fibrous connective tissue stroma with Islands and stands of odontogenic epithelium. Variably scattered Cementum like or dentinoid like materials can be seen. Here we are presenting first case report of multiple central odontogenic fibromas of WHO type involving canines and premolar areas.

Keywords: Central odontogenic fibroma, WHO type, dentinoid.

INTRODUCTION

Central odontogenic fibroma benign odontogenic intraosseous neoplasm of rare variety. It is a tumour of ectomesenchymal origin, may arise from periodontal ligament, dental papilla or dental sac.¹ Percentage of its occurrence in oral cavity is about 1% to 2.5%.² It occurs both in males and females with female predominance.³ COF occurs more commonly in second and fourth decade of life. It may occur either the maxilla or the mandible, posterior or anterior part of the mouth. Radiographically, COF usually appears as a well defined unilocular lesion, and sometimes multilocular appearance can be seen with irregular scalloped borders.⁴

CASE REPORT

A 13year old male patient reported with chief complaint of multiple unerupted teeth in both upper and lower jaw. Patient was moderately built and nourished. Extra orally no changes were seen. On intra oral examination the teeth missing were canines, first and second premolars of both maxillary and mandibular arches. Orthopantomograph reveals radiolucency

resembling follicular spaces surrounding the crown of the following above mentioned unerupted teeth. Provisional diagnosis of follicular cyst or dentigerous cyst was made and surgical removal of the lining along with curettage was done and sent for histopathological processing and diagnosis. Macroscopically, the lining was greyish white in colour, soft to firm in consistency, each measuring about 2.0x 1.0x 0.5 cm in size. Tissue were routinely processed and stained with H& E stain. Microscopically tissue sections shows dense fibrous connective tissue stroma containing plump fibroblasts interspersed with bundles of collagen fibres. Islands and stands of odontogenic epithelium were found scattered. Cementum like or dentinoid like materials were also found as dense aggregates in areas of few sections. Correlating clinically and radiographically, histopathological diagnosis was made as odontogenic fibroma of WHO type. With one year follow up, there was no recurrence of the tumor.

DISCUSSION

The World Health Organization (WHO) has defined the odontogenic fibroma as "a benign

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Fig 1: Computed tomography showing tumor without cortical expansion.



Fig 2: Extraoral photograph showing normal facial appearance.



Fig 3: Intraoral photograph showing missing permanent canines, first and second premolars of all quadrants.



Fig 4: Orthopantomograph showing displaced canines from their normal position with unerupted first and second premolars of all quadrants.

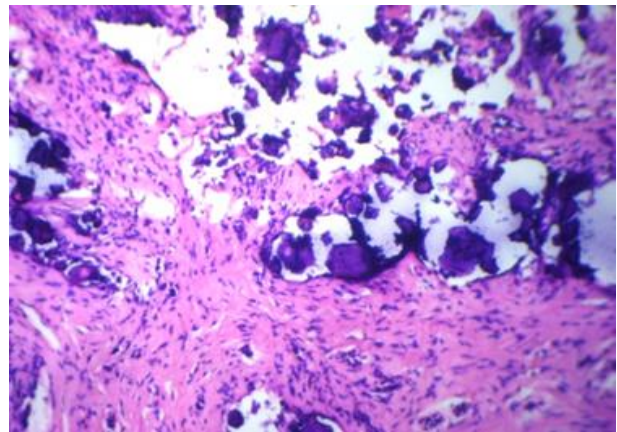


Fig 5: Section showing dense aggregates of Cementum like or dentinoid like materials.

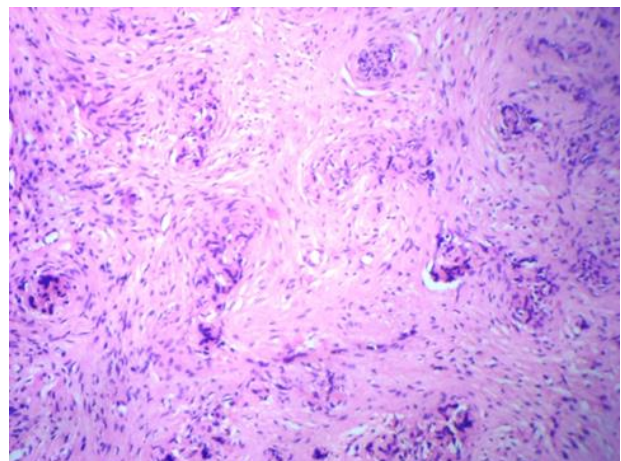


Fig 6: Histopathological picture showing dense fibrous connective tissue stroma containing plump fibroblasts interspersed with bundles of collagen fibres. Numerous scattered Islands and stands of odontogenic epithelium can also be seen.

odontogenic neoplasm of fibroblastic origin characterized by relatively mature collagenous fibrous tissue and varying amounts of odontogenic epithelium with potential to occur in either a central or an extra osseous location.” The osseous part is designated as central odontogenic fibroma (COF). COF was first described in 1991 by Handlers et al. and is a rare tumor of ectomesenchymal origin that containing strands of odontogenic epithelium with collagenous stroma.⁵ As COF originates from ectomesenchymal odontogenic tissues such as dental follicle and the periodontal ligament, the lesion may confined either to coronal or radicular portion of teeth.⁶ COF clinically appears as a slow growing painless swelling that may exhibit cortical expansion.⁷ In our case, clinically the tumor didn’t show any sign of swelling or cortical expansion and was painless. Mandibular premolar and molar region is most common site for the presentation of COFs, while in the maxilla they are mostly commonly seen in the anterior region.⁸ In Our case teeth missing were canines, first and second premolars of all quadrants. Tumor prevented the eruption of teeth at their normal sequence. Radiographically COF usually appears as a well defined unilocular radiolucent lesion similar to odontogenic cysts, CGCG, traumatic bone cyst, as well as ameloblastoma.⁹ Multilocular variant resembles ameloblastic fibroma, odontogenic myxoma and aggressive lesions such as desmoplastic fibroma, juvenile aggressive fibromatosis or fibrosarcoma.⁵ In some case lesion appears as mixed radiopaque- radiolucent areas with glass ground appearance. ¹⁰ In our case, the tumor appeared as well defined radiolucent lesion encasing the entire developing tooth with radiopaque border. Radiographically the COF resembles dentigerous cyst with some lesion showing extending into the ramus, high upto the coronoid process and the lower border of the mandible.¹¹ In our case, the Maxillary teeth were placed high into the maxillary sinus and mandibular abutted to the lower border of the mandible. Case of COF showing periosteal reaction has been reported in young patient, which could be due to the age and rapid growth.¹² Histopathologically Gardner in 1980 classified lesions as COF into three categories: (a) the hyperplastic dental follicle. (b) A fibrous neoplasm with collagenous fibrous connective tissue containing odontogenic epithelium- (simple type). (c) A lesion with fibrous

tissue, odontogenic epithelium and myxoid areas- (WHO type). ¹³ WHO type occurs much less commonly than the simple type. Histopathology of World Health Organization [WHO] type odontogenic fibroma has a complex pattern of arrangement consisting of collagen fiber with narrow cords of odontogenic epithelium. In some cases, cementum-like material or dentinoid like materials can be seen. ¹ In present case there were numerous foci of cementum or dentinoid like materials were seen. Histopathological differential diagnosis of odontogenic fibroma includes Hyperplastic follicular sac, fibromyxoma, desmoplastic fibroma and ameloblastic fibroma which requires clinical and radiological correlation for definitive diagnosis. ¹⁴ As Desmoplastic ameloblastoma, is more aggressive and it should be differentiated from COF. desmoplastic ameloblastoma lacks epithelial component which is seen in odontogenic fibroma. Hybrid lesions of COT with giant cell central granuloma were reported by Ronell et al. and Gabriel et al. ^{15, 16} Recurrence rate of COF is about 7.4-13%.¹⁷ Recurrence of COF reported by Heimdal et al. was 9 years After surgery and Jones et al, 16 months after surgery.^{18,19}

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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