

## Case Report

# Central odontogenic fibroma of the maxilla

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### Abstract

Central odontogenic fibroma (COF) is an uncommon tumor that accounts for 0.1% of all odontogenic tumors; it has been defined as a benign neoplasm of the jaw. Clinically, the lesion grows slowly and leads to cortical expansion. Radiologically, the most common finding is multilocular radiolucency. The lesions are associated with the crown of an unerupted molar, premolar, or incisor tooth and in some cases, with root resorption or displacement. Histologically, the lesion is characterized by mature collagen fibers and numerous fibroblasts. COF responds well to surgical enucleation with no tendency for malignancy or recurrence. We report a case of a 15-year-old female patient presented with painless swelling of the left side of the maxilla since her childhood. Radiographs revealed an expanding ill-defined radiolucency with a displacement of the adjacent tooth. The impacted tooth was pushed posteriorly. The lesion was removed surgically. There were no postoperative complications.

**Key words:** Central odontogenic fibroma, intraosseous neoplasm, odontogenic fibroma

### INTRODUCTION

Central odontogenic fibroma (COF) is a very rare proliferation of mature odontogenic mesenchyme and hence that locations and sex and age distributions cannot be accurately determined.<sup>[1-4]</sup> In general, the lesion is asymptomatic except the swelling of the jaw. The lesion may evolve from a dental germ (dental papilla or follicle) or from the periodontal membrane, and, therefore, is invariably related to the coronal or radicular portion of teeth.<sup>[5]</sup>

Radiographically the tumor sometimes produces an expansile multilocular radiolucency similar to that of the ameloblastoma. The rarity of this tumor excludes it from most differential lists, and when diagnosed, it is an unexpected finding that usually requires expert second opinions for confirmation. Most presentations will suggest the more common radiolucent odontogenic cysts and tumors such as an odontogenic keratocyst, an ameloblastoma or an odontogenic myxoma, as well as an ameloblastic fibroma in children and teenagers. In younger

individuals, the presentation will also suggest a central giant cell tumor.<sup>[5]</sup>

### CASE REPORT

A 15-year-old female patient presented with a painless swelling on the left side of the upper jaw. The parents' patient first noticed the swelling when she was still a child, and it was increasing slowly. As she was growing up, the patient started having aesthetic discomfort.

Extraoral examination revealed facial asymmetry with a hard swelling on the left buccal side of the upper jaw, extending from temporal area to the cheek [Figure 1]. There was no change of temperature or color of the overlying skin. None of the lymph nodes was palpable. On intraoral examination, a swelling extending from distal of left mandibular canine back to tuberosity

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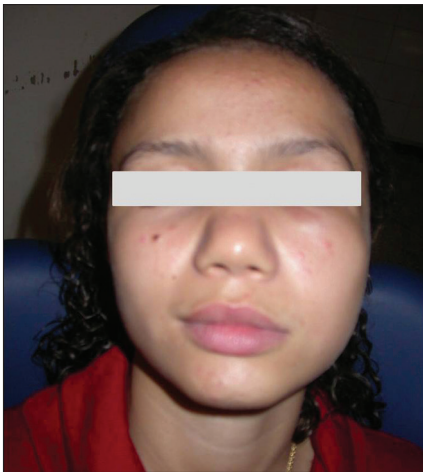
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**Figure 1:** Facial asymmetry with a hard swelling on the left buccal side of upper jaw, extending from temporal area to the cheek



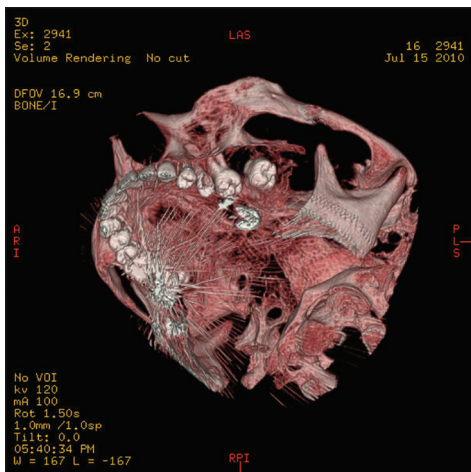
**Figure 2:** Intraoral examination revealing a swelling extending from distal of left mandibular canine back to tuberosity was noticed with normal appearance of the overlying mucosa



**Figure 3:** Orthopantomogram showing a large maxillary multilocular radiolucent lesion, extending from left second premolar to the maxillary tuberosity region



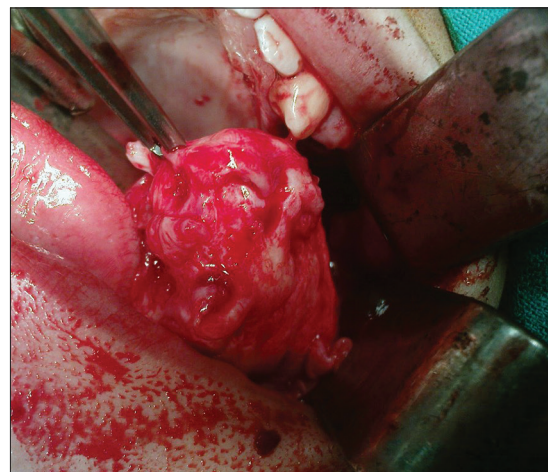
**Figure 4:** Axial computed tomography scan showing the expansion of the tumor mass to the maxillary sinus, as well as the bone perforation



**Figure 5:** Three-dimensional view showed the large bone destruction and the impacted teeth

was noticed. The lesion had a firm consistency. The overlying mucosa was normal in appearance [Figure 2].

Orthopantomogram showed a large maxillary multilocular radiolucent lesion, extending from left second premolar to the maxillary tuberosity region. No



**Figure 6:** The tumor was treated by enucleation under general anesthesia and was found to be a well circumscribed, solid mass that was separated easily from surrounding bone and was enucleated one piece

evidence of root resorption was seen [Figure 3]. Axial computed tomography scan demonstrated a mass of the maxilla, which expanded the buccal cortical plate and perforated bone cortex in some places [Figure 4]. The three-dimensional view showed the large bone destruction [Figure 5].

Differential diagnosis of the lesion included ameloblastoma, odontogenic myxoma, ameloblastic fibroma, central giant cell tumor, and ossifying fibroma.

The tumor was treated by enucleation under general anesthesia and was found to be a well circumscribed, solid mass that was separated easily from surrounding bone and was enucleated one piece [Figure 6]. The impacted tooth was removed with the tumor. The histopathological examination revealed a tumor consisting of fibrous tissue with myxoid areas along with islands and strands of the inactive odontogenic epithelium.

Based on clinical, radiographic and histological findings, a diagnosis of COF was made, and the patient was advised a long-term follow-up. There was no sign of recurrence 1-year postoperatively.

## DISCUSSION

COF is a rarely encountered and benign neoplasm that could appear very similar to the other odontogenic tumors.<sup>[3,6]</sup> However, odontogenic fibroma is considered as a distinct neoplasm with its own histopathologic and clinical features separating it from other odontogenic tumors.<sup>[5,7]</sup>

COF originates from ectomesenchymal odontogenic tissues such as dental follicle and the periodontal ligament. COF constitutes approximately 0.1% of all odontogenic tumors. There is no gender predilection in some reports and some others present mild female dominant. The age of the patients varies from 4 to 80, and it is more frequent in the third or fourth decades of life.<sup>[8]</sup>

Clinically, COF is expansible and slow-progressing, and it is usually asymptomatic intraosseous neoplasm, similar to our case.<sup>[9]</sup>

Radiographically, COF tends to be unilocular radiolucent lesion with well-defined borders similar to odontogenic cysts, central giant cell granuloma, traumatic bone cyst, as well as ameloblastoma.<sup>[7]</sup> Radiographic findings may show a multilocular radiolucent lesion with ill-defined borders, the differential diagnosis consists of benign lesions such as ameloblastic fibroma, odontogenic myxoma and aggressive lesions

such as desmoplastic fibroma, juvenile aggressive fibromatosis or fibrosarcoma.<sup>[2,8,10]</sup> Sometimes, the small radiolucent lesions of the COF may resemble as dentigerous or apical cysts. However, the large ones are possessed of the potential to cause tooth divergence, tooth displacement or extensive external resorption of the associated roots.<sup>[9]</sup>

Histopathologically, the COF is featured by one or more of the following characteristics: Fibrous or myxoid stroma, odontogenic epithelium and calcifications. Scattered fibroblasts within a collagen-rich background are often seen.<sup>[6]</sup>

Recently the COF is classified into two types: The epithelium-rich type (formerly termed the WHO-type) and the epithelium-poor type (formerly termed the simple type). The distinction between the two types was drawn according to the histological appearance. The epithelium-rich type lesions often show epithelial islands or strands. The epithelium-poor type lesions are less cellular, and the epithelial tissue is not necessarily presented. It is generally agreed that the odontogenic epithelium is not always presented in the COF. When presented, epithelial nests or epithelial cords are probably distributed throughout the tumor. If the epithelium is absent, the histological feature mimics desmoplastic fibroma which is more malignant potential than the COF.<sup>[1,2,6]</sup>

The COF generally treated by enucleation and curettage. A few recurrences have been reported, but the prognosis is excellent. Long-term regular follow is nonetheless recommended.<sup>[6]</sup>

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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