Central Odontogenic Fibroma of Mandible — A Case Report

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Abstract

The central odontogenic fibroma (CODF), which has been categorized under the subheading of odontogenic tumors of ectomesenchyme, is such an uncommon neoplasm that much of its nature is left uncharted. In this report, we described a 20-year-old female with a painless unilocular radiolucent lesion over left side of mandibular body. Histopathological study showed collagen-rich background with spindle fibroblasts and diagnosis of the central odontogenic fibroma was confirmed. A brief review of the clinicopathological features, management and prognosis of the CODF were going to be presented in this report as well.

Key words: odontogenic fibroma, intraosseous neoplasm.

Introduction

The central odontogenic fibroma (CODF), which has been categorized under the subheading of odontogenic tumors of ectomesenchyme, is a rare, benign intraosseous neoplasm. The CODF is classified into two types: the epithelium–rich type and the epithelium–poor type. Since CODF is quite rare, present a case of CODF over left side of mandibular body and literature review of its clinicopathological features, management and prognosis.

Case report

The 20-year-old female was referred from the local dental clinic to our oral and maxillofacial surgery department due to one radiolucent lesion identified over left side of mandibular body on the panoramic film. The patient herself hadn’t noticed any discomfort prior to the dental appointment and she had neither major systemic problems nor congenital/hereditary diseases.

Physical examination yielded no abnormal findings on inspection and palpation of left side of mandibular body. Percussion on lower left teeth was not remarkable either. EPT of lower left second and third molars was positive and that of lower first molar was negative due to previous root canal therapy. There was no evidence of numbness of the tongue and lower lip. No lymphadenopathies were detected.
On the radiographic film, one unilocular radiolucency with well-defined border over apical region of lower left first and second molars was noted (Fig. 1 and 2). Computed tomography reported that the upper part of the lesion touching the roots of lower left second molar (Fig. 3). Odontogenic cyst was impressed and the patient was arranged for surgical excision under general anesthesia.

At surgery, one gray brown elastic intrabony tumor about 1.5 cm in diameter was excised (Fig. 4). Involvement of roots of lower left second molar was noted. After the curettage of the remaining bone fragments, beta-tricalcium phosphate material was placed in the bony defect as bone graft.

Histopathological examination showed collagenous stroma with fibroblastic cells distributed. The microscopic characteristic together with the findings on operation had confirmed the tumor to be central odontogenic tumor, epithelium-poor type (Fig. 5).

It has been 8 months since the surgical management. Bone regeneration over the previous tumor-occupied region was detectable on panoramic films postoperatively (Fig. 6). Patient did not complain any post-op paresthesia. Long-term follow-up is necessary for monitoring of local recurrence.

**Discussion**

The central odontogenic fibroma (CODF) is a rarely encountered and poorly understood odontogenic neoplasm. No more than 80 cases have been described in the literature. In a retrospective study of 1642 odontogenic cases in a Chinese population published in 2007, only 0.3% was odontogenic fibroma. The prevalence of 1.5% was reported in a study of 1088 odontogenic tumors from northern California in 2006. The age of the patients varies from 4 to 80 and it is more frequent in the third or fourth decades of life. There is no gender predilection in some reports and some others present mild female dominant.

Clinically, the CODF is expansible and slow-progressing, and it is usually an asymptomatic intraosseous neoplasm. In our case, the patient didn’t notice any discomfort before the routine dental checkup. In certain circumstances, the expansion of the tumor may result in resorption or displacement of the involved teeth. In 2006, Inaki Cercadillo-Íñiguez et al. reported a patient with lower right third molar displaced to coronoid process due to the CODF occupying. In that example, however, the patient had suffered from sporadic gingival swelling and drainage of fluid into the mouth for about four years.

Radiographically, the CODF tends to be a well-defined, unilocular or multilocular radiolucent lesion. Sometimes, the small radiolucent lesions of the CODF 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.

Histopathologically, the CODF is featured by one or more of the following characteristics: (a) fibrous or myxoid stroma, (b) odontogenic epithelium and (c) calcifications. Scattered fibroblasts within a collagen-rich background are often seen. Recently the CODF 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
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Fig. 1. The panoramic film showed one well-defined unilocular radiolucent lesion over left side of mandibular body.

Fig. 2. The well-defined radiolucency over the periapical region of tooth 37.
Fig. 3. Computed tomographic image revealed that the upper part of the lesion touching the roots of lower left second molar.

Fig. 4. Macroscopic view of the lesion.
Fig. 5. Photomicrograph showing the tumor was composed of collagenous stroma with fibroblast
distributed, no odontogenic epithelium was found on the sections of this tumor (left: 200X, right:
400, H & E stain).

Fig. 6. Eight months after operation, the periapical region of tooth 37 was more
radiopaque. The radiopaque implied bone healing progression.
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 odontogenic epithelium is not always presented in the CODF. 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 CODF.\textsuperscript{5,7}

The CODFs are usually managed by enucleation or vigorous curettage. Good prognosis can be foreseen. Recurrence is relatively uncommon but there are still some examples of recurred CODF. Heimdal \textit{et al.} reported a case of recurrence nine years after primary operation in 1980.\textsuperscript{8} Jones \textit{et al.} reported one patient who recurred sixteen months after surgery in 1989.\textsuperscript{9} The tendency toward malignant change of the CODF is not considered high in the literature. Long-term regular follow is none the less recommended.

\textbf{References}

下顎骨內齒源性纖維瘤—病例報告

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摘 要

齿源性纤维瘤为一源自外胚层间叶组织的齿源性肿瘤，其非常罕见且成因不明。本病例为一位二十歲女性，其左侧下顎骨内有一單房性放射線透射病灶，手術後病理報告顯示腫瘤中富含膠原基質及梭狀纖維母細胞，確定診斷為齒源性纖維瘤。本文亦就齒源性纖維瘤之臨床病理特徵、處置及預後作一総體性回顧。

關鍵詞：齒源性纖維瘤，顎骨腫瘤。

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