

Oral and Maxillofacial Surgery

Central Odontogenic Fibroma: A Case Report



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Abstract

Odontogenic fibroma is a rare kind of tumour of odontogenic origin, with variable percentages of incidence. The clinical and radiological features of odontogenic fibroma are similar to other odontogenic tumours. Clinical and radiologic findings confirmed the tumour to be a central odontogenic fibroma. Central odontogenic fibroma is a rare odontogenic neoplasm that originates from odontogenic ectomesenchyme. The lesion is usually asymptomatic except for swelling of the jaw. Radiologically, central odontogenic fibroma manifests as a unilocular or multilocular image with well defined margins. The multilocular radiolucent form is more frequently associated with complications such as severe reabsorption of the roots of adjacent teeth, displacement of near-lying teeth or some included tooth. Enucleation of the lesion is the normal treatment usually adopted.

|| Key Words

Odontogenic fibroma, neoplasm, odontogenic ectomesenchyme, swelling of jaw.

|| Introduction

Odontogenic fibromas can be divided into central (intraosseous) odontogenic fibroma and peripheral (extraosseous) odontogenic fibroma according to the anatomical sites involved^[1]. Central odontogenic fibroma is a rare odontogenic neoplasm that originates from odontogenic ectomesenchyme. The lesion is usually asymptomatic except for swelling of the jaw^[2] Since being introduced into the World Health Organisation (WHO) classification of odontogenic tumours in 1971, COF has caused confusion due to its nature and definition. 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^[3,4]. Gardner defined two histological variants. First, a hyperplastic dental follicle with a connective fibrous tissue and small amounts of odontogenic epithelium and a second, WHO type or complex with connective cellular tissue, a prominent epithelial component and the presence of variable quantities of dentine or cement-like tissue.^[3] Radiologically, central odontogenic fibroma manifests as a unilocular or multilocular image with well defined margins. The multilocular radiolucent form is more frequently associated with complications such as severe reabsorption of the roots of adjacent teeth, displacement of near-lying teeth or some included tooth^[5]. The treatment of COF involves conservative surgery through enucleation of the lesion and depending on the extent of the residual defect, the bone regenerative procedure must be considered.

|| Case Report

A 10-year old male child reported to us with the chief complaint of a painless swelling in the lower right back tooth region. The swelling was noticed one month back when the patient experienced discomfort on mastication. Intraoral examination revealed a firm swelling measuring approximately 2.5 cms in diameter over the right mandibular retromolar region. There was obliteration of the buccal sulcus distal to the mandibular permanent first molar. The overlying mucosa was inflamed due to cusp impingement of the opposing maxillary molar. (Fig. 1) There was no evidence of suppuration, regional paresthesia or lymphadenopathy. The orthopantomogram and CT scan revealed a well defined expansile radiolucency



Fig.1: Preoperative Intra oral photograph of the patient

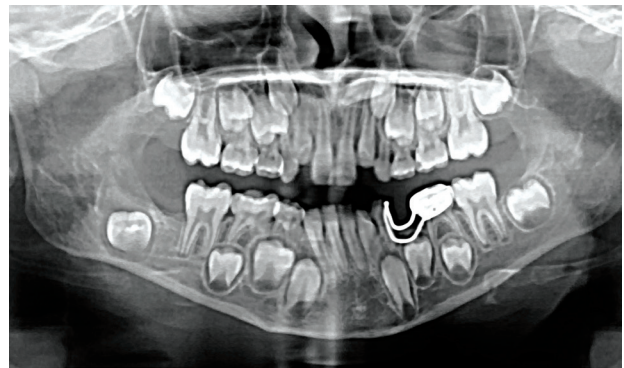


Fig.2: Preoperative OPG of the patient

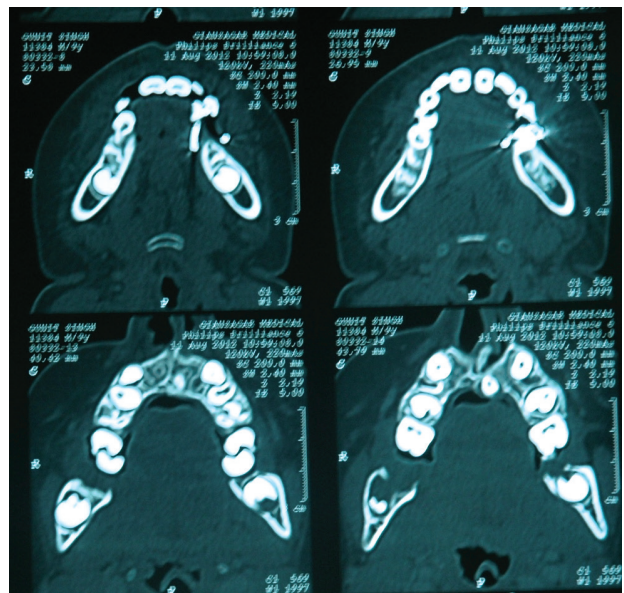


Fig.3: Preoperative CT Scan of the patient

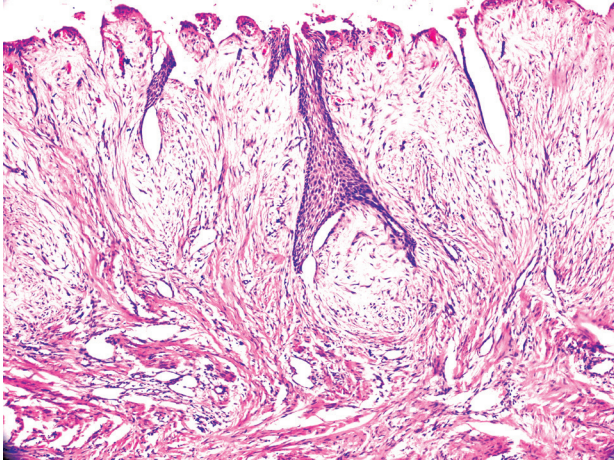


Fig.4: A photomicrograph showing loosely arranged fibrocollagenic tissue with myxoid area



Fig.5: Intraoperative photograph of the patient



Fig.6: Postoperative Intra oral photograph of the patient

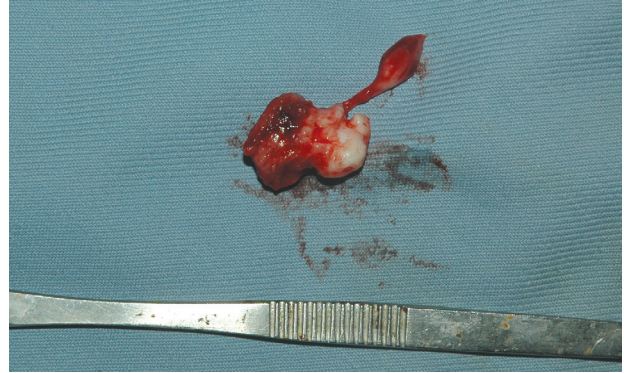


Fig.7: Excised Specimen

around 2.5 × 1.5 cms in size in the right mandibular angle region associated with unerupted permanent second molar tooth bud along with thinning of the buccal and lingual cortices.(Fig. 2,3) An incisional biopsy of the mass was performed but the report was inconclusive of a definite pathology suggestive of reactive fibrous hyperplasia. Keeping in mind benign nature of the lesion, complete enucleation of the mass along with second molar tooth bud and its follicle was carried out under G.A. Peripheral osteotomy and chemical cauterization was also performed. The histopathological examination of the biopsy sample showed stratified squamous epithelium which was focally hyperplastic. The subepithelium showed circumscribed nodule composed of loosely arranged fibrocollagenic tissue with myxoid areas and occasional inflammatory cells. (Fig. 4) These histopathological features were suggestive of central odontogenic fibroma. The patient was kept on regular follow up visits to rule out any recurrence. Complete recovery of function took place with no signs of recurrence till date. (Fig. 5,6,7)

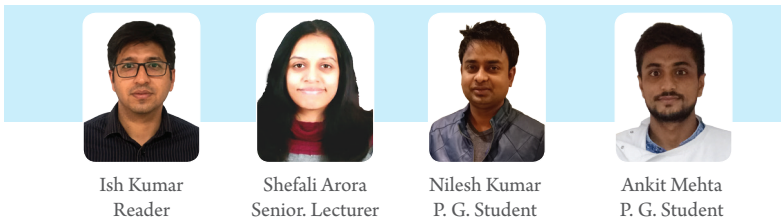
|| Discussion

Central odontogenic fibroma is believed to originate from mesenchymal odontogenic tissue such as dental papilla, periodontal ligament, or dental follicle. Based on histogenesis of the lesion, WHO classification suggested that the epithelium-poor type of Central odontogenic fibroma is derived from the dental follicle, whereas the epithelium-rich type arises from the periodontal ligament.^[6] Till now, approximately 80 patients have been reported as single cases or case series in English literature^[7]. The peak incidence of Central odontogenic fibroma has been observed

in the second decade of life and shows a female predilection^[7], although cases have been recorded of patients between the ages of 5 and 80 years^[8]. In our case report the patient was a 10 year old male child. COF was originally thought to occur almost exclusively in the mandible, and was mostly found in the posterior mandible^[3]. Our patient had lesion in the right posterior retromolar region. Radiologically, most cases of Central odontogenic fibromas are radiolucent, unilocular with well-defined borders similar to other radiolucent lesions such as traumatic bone cyst, ameloblastoma, odontogenic cysts, and central giant cell granulomas^[9]. Many clinical cases of odontogenic fibroma showed a dislocation of adjacent teeth and, sometimes, root resorption. The case reported in this study showed a well defined unilocular expansile radiolucency in the right mandibular angle region with associated unerupted permanent second molar tooth bud along with thinning of the buccal and lingual cortices. There was no displacement of adjacent

tooth, neither was any resorption of roots evident. The histologic differential diagnosis is based on the presence of the reactive fibrous hyperplastic tissue, which may contain occasional inactive odontogenic cells. Histologically, the first type, classified as simple, contain fibrous tissue with various amounts of collagen and the second type, which has been referred to as the WHO type or complex type, contains fibrous tissue with myxoid area associated to odontogenic epithelium^[3]. Based on this histologic pattern, our case is suggestive of WHO type showing squamous epithelium which was focally hyperplastic in a loosely arranged fibrocollagenic tissue with myxoid areas and occasional inflammatory cells. The central odontogenic fibroma is usually easily removed, not showing any adherence to bone and/or to tooth structure. The lesion is slow-growing and typical conservative surgical intervention including enucleation and curettage has often proved to be successful^[10].

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