Case Report

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Ameloblastic Fibroma of Mandibular Anterior Segment

Abstract:
Ameloblastic fibroma is a rare odontogenic tumor occurring in first two decades of life. Various case reports have shown that conservative treatment is successful in such cases. This case report highlights a case of ameloblastic fibroma occurring in 11-year female which was successfully treated with endodontic treatment of teeth and surgical removal of the lesion.

Key-words: MeSH: ameloblastic fibroma, odontogenic tumor, conservative treatment

Introduction:

Ameloblastic fibromas are benign odontogenic tumors which occur due to neoplastic proliferations of odontogenic epithelium and primitive mesenchymal components resemblingthe dental papilla. Ameloblastic fibromas occur in the first and second decades of life during the period of tooth formation, with an average age of about 15 years.[1] They are slightly more common in males. These tumors usually produce a painless, slow-growing bony hard swelling. An unerupted tooth is associated with the lesion in approximately 75% of cases.[2]Although the most common sign is swelling or a missing tooth, this neoplasm may also be discovered on imaging made for another purpose. Ameloblastic fibromas usually develop in the posterior mandible, extending as far posteriorly as the mandibular ramus and as far mesially as the premolar/molar areas. Radiographic appearance of ameloblastic fibroma is similar to that of a cyst with well-defined and corticated borders. It is more commonly totally radiolucent and unilocular although multilocular lesions have been reported.[3] This article presents a case of ameloblastic fibroma in an 11 year old female patient occurring in anterior mandible which was treated with enucleation of the tumor and 1 year follow up.

Case report:

An 11-year-old female patient presented to the department of Pediatric dentistry with the chief complaint of swelling in lower front region of jaw for 2 years. She gave the history of gradual increase in size of swelling which was not associated with any pain or discharge. Extra oral swelling was present with respect to lower third of the face causing disfigurement and major cause of concern for patient and her guardian. On examination, she had a mixed dentition and mild calculus with lower anterior teeth. On palpation, a bony hard swelling was felt over anterior mandible in relation to tooth number 33, 32, 31, 41, 42, 43 regions. Electric pulp testing reveals vital teeth from 33- 43 region. Patient was advised an orthopantomogram which showed a unilocular radiolucent lesion with well corticated margins extending up to lower border of the mandible extending from 33 to 43 regions with flaring of roots of incisors (41, 31). FNAC was attempted with an 18-gauge needle which resulted in negative aspiration. A provisional

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diagnosis of odontogenic tumor was made. Considering the age of the patient, a conservative approach was followed for treatment which included apical sealing and root canal treatment of all involved teeth followed by enucleation of the lesion and curettage of the surrounding bone. Biopsy revealed rows of columnar cells and loosely arranged epithelial cells resembling stellate reticulum which was suggestive of ameloblastic fibroma. Patient was followed up every 3months till 1 year and the healing was satisfactory.

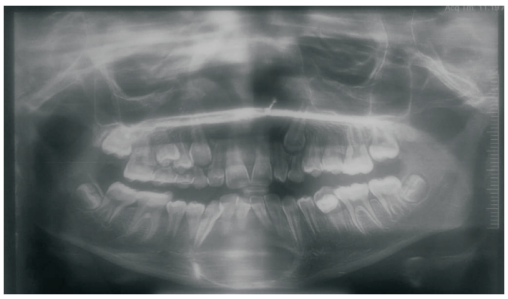

Figure 1: Preoperative OPG of the patient

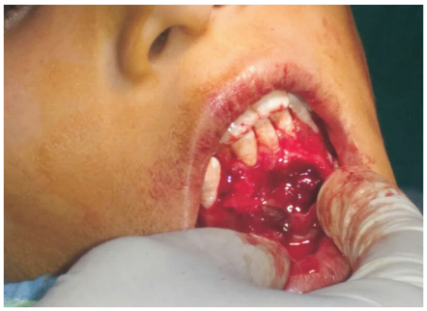

Figure 2: Intra operative picture of the patient

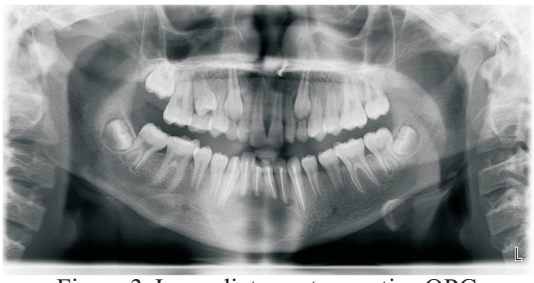

Figure 3: Immediate post operative OPG

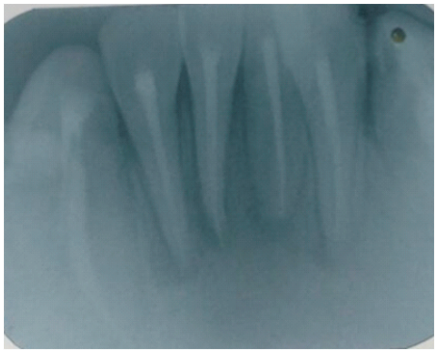

Figure 4: IOPA after 1 year

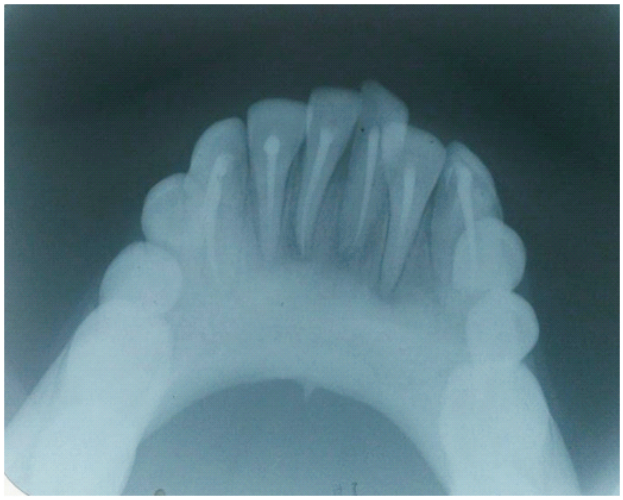

Figure 5: Occlusal radiograph of the patient after 1 year

Discussion:

Odontogenic tumors are uncommon lesions that originate from cells and tissues involved in odontogenesis and from their remnants. These tumors comprise a heterogeneous group of lesions ranging from hamartomatous ones to benign and malignant neoplasms. Odontogenic tumors are classified into epithelial, mesenchymal, and mixed epithelial and mesenchymal tumors based on the odontogenic tissue they mimic.[4]Ameloblastic fibroma is a rare, mixed odontogenic tumor of epithelial and ectomesenchymal tissue without formation of dental hard tissues such as enamel and dentin.[5]

Ameloblastic fibroma was first reported by Kruse in 1891.[6] Initially, it was confused as ameloblastoma for many years and was classified first time as a separate entity by Thoma and Goldman in 1946;[7]they named it as soft odontoma. It was defined by the World Health Organization in 1992 as "neoplasms composed of proliferating odontogenic epithelium embedded in a cellular ectomesenchymal tissue that resembles the dental papilla and with varying degrees of inductive change and dental hard tissue formation"[8] and was classified as ameloblastic fibroma under the heading of odontogenic epithelium with odontogenic ectomesenchyme with or without hard tissue formation in 2005.[9] Ameloblastic fibroma predominantly occurs in children and young adults, with an average age being 14.6–15.5 years,[10] youngest of which was found in a 7-week-old infant.[11] Clinically ameloblastic fibroma appears as slow growing, painless swelling affecting posterior mandible followed by posterior maxilla. It has slight male predilection and is often associated with an impacted tooth. Radiographically it appears as a unilocular radiolucency or multilocular in case of larger lesions. The occurrence of ameloblastic fibroma in female, anterior mandible crossing the midline and no

association with impacted teeth makes this a unique case report. Differential diagnosis in this case includes central giant cell granuloma, ameloblastoma, early stage odontoma, odontogenic myxoma and early stage ameloblastic fibro odontoma. According to Cahn and Blum, AF is a hamartomatous lesion which, over time, will mature into an ameloblastic fibro odontoma, and finally into mineralized complex odontoma.[12]

Histologically this tumor behaves as a true neoplasm with its mesenchymal component consisting of myxoid, cell-rich and resembling the dental papilla of the tooth bud and the epithelial component consist of pattern of narrow, elongated strands of two tight and parallel-running with budding, layers of cuboidal to columnar cell or assembled follicular stage of enamel. In the present case the epithelial component appeared as long and narrow columnar cells and mesenchymal component resembled the dental papilla. Hence the present diagnosis was made.

The treatment for small, asymptomatic tumors (especially in young children) is conservative; however, recurrence may occur and fibrosarcoma is the most common tumor to arise from remnants of ameloblastic fibroma. Extensive, larger tumors and recurrences should be treated radically with the surrounding bone.[13]In this case excision of the lesion was done under local anesthesia and 1 year follow up of the patient was done. There was no recurrence of the lesion after 1 year both radiographically and clinically and had a good growth of bone post-surgery. Considering the age and aesthetic for this patient an attempt was made to save the anterior teeth which was successful.

Conclusion: This case report highlights a case of ameloblastic fibroma in 11-year-old female in anterior mandible crossing the midline which was successfully treated with conservative management. However, considering high recurrence and malignant potential of these tumors a long follow up and constant monitoring using radiograph is advised for such cases.

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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