Ameloblastic Fibroma Mimicking Dentigerous Cyst: A Diagnostic Dilemma

Kiran C. Khande, Husain J. Mograwala[1], Rajshekhar C. Halli[1], Manjula A. Hebbale[2]

Department of Oral and Maxillofacial Surgery, Shri Saibaba Hospital, Shirdi, Departments of [1]Oral and Maxillofacial Surgery and [2]Oral Medicine and Radiology, Bharati Vidyapeeth Dental College and Hospital, Pune, Maharashtra, India

Abstract

Ameloblastic fibroma is a rare, slow-growing odontogenic mixed tumor with neoplastic epithelial and ectomesenchymal tissue, which does not show inductive changes to form enamel and dentin. It is frequently found in the first two decades of life. It is often confused with ameloblastoma and dentigerous cyst due to the presence of an impacted tooth and can be distinguished histologically. Ameloblastic fibroma can be differentiated from ameloblastoma by the presence of myxoid appearance of connective tissue. A case of an 11-year-old female with a slow-growing swelling on the left side of mandible in the molar ramus region has been presented which was diagnosed as ameloblastic fibroma postenucleation.

Keywords: Ameloblastic fibroma, enucleation, odontogenic tumor

Introduction

Ameloblastic fibroma is a very rare, slow-growing mixed odontogenic tumor, representing only 2% of odontogenic tumors.[1] It is often confused with ameloblastoma and dentigerous cyst due to its association with an impacted tooth and a well-defined radiographic border.

It is frequently seen in the first two decades of life with a mean age of 14.8 years.[2]

We present a case of an 11-year-old female with a history of a slow-growing mass in her left mandibular molar region for 4 months, which was diagnosed as ameloblastic fibroma postenucleation.

Case Report

An 11-year-old female reported to us with a chief complaint of hard swelling over the left mandibular molar region progressively growing for 4 months [Figure 1] and not associated with pain. Radiographic examination revealed a multilocular radiolucency with a well-defined border involving the molar–ramus region extending to the lower border and the subsigmoid region of the left mandible. It also involved the impacted teeth # 35, 37, and 38, and there was root resorption seen with 36. The impacted third molar was found near the sigmoid notch [Figure 2].

The patient was taken up for surgery under local anesthesia. A mucoperiosteal flap was reflected from the buccal sulcus to expose the lesion [Figure 3]. A thin layer of alveolar bone was removed, and the lesion was enucleated intact, along with the involved impacted teeth [Figure 4], followed by primary closure [Figure 5].

The patient has been without any evidence of recurrence, and radiographic examination has shown good ingrowth of bone at 1-year follow-up [Figure 6].

Posthealing, a removable partial denture was fabricated for the patient as a space maintainer [Figure 7].

Histopathological examination revealed an epithelial component characterized by islands, cords, and strands of odontogenic epithelium in the ectomesenchymal tissue stroma

Address for correspondence: Dr. Husain J. Mograwala, Room No. 106, Department of Oral and Maxillofacial Surgery, Bharati Vidyapeeth Dental College and Hospital, Katraj, Pune - 411 043, Maharashtra, India.
E-mail: husainmograwala@gmail.com

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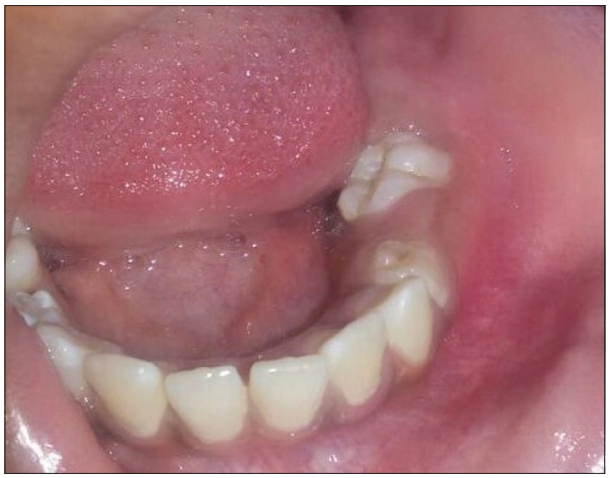

Figure 1: Preoperative intraoral photograph showing swelling over the left molar region

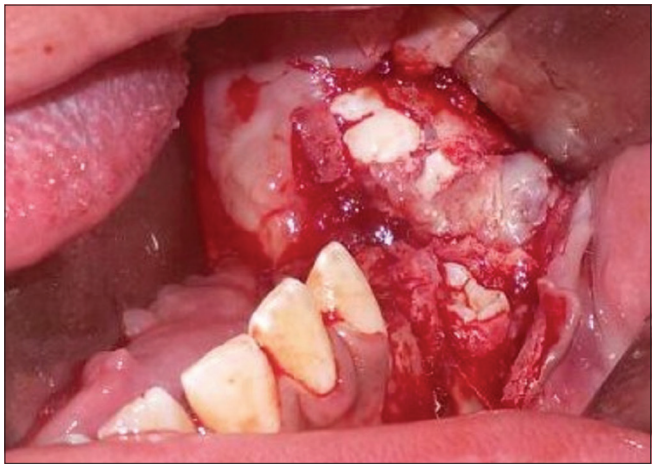

Figure 3: Exposure of the tumor from the buccal side

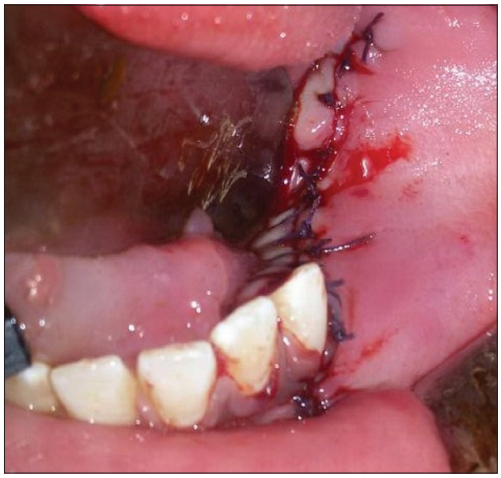

Figure 5: Primary closure with 3-0 vicryl sutures

mimicking dental papilla [Figure 8]. The epithelial cells were rounded or cuboidal, arranged in a variety of patterns. The overall histological picture was suggestive of ameloblastic fibroma.

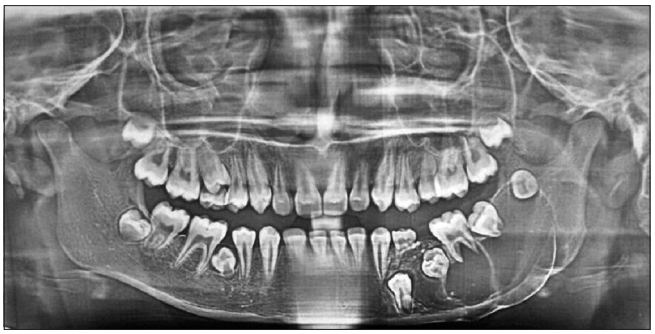

Figure 2: Preoperative radiograph (orthopantomogram) showing the multilocular lesion extending till the lower border and the subsigmoid region, with multiple impacted teeth

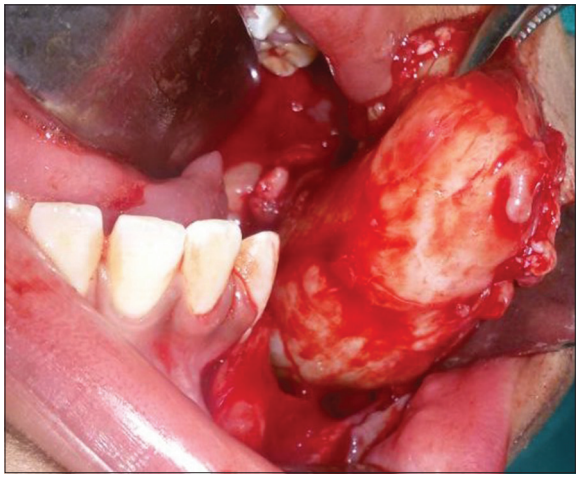

Figure 4: Complete enucleation of the tumor

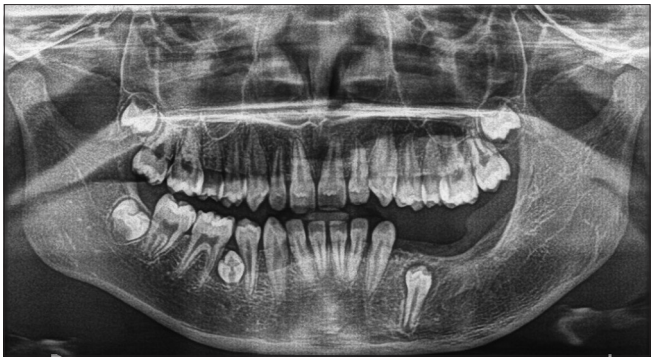

Figure 6: Postoperative radiograph at 1-year follow-up showing good bone growth without recurrence

Discussion

Ameloblastic fibroma is a rare, odontogenic mixed tumor with neoplastic epithelial and ectomesenchymal tissue without formation of dental hard tissues such as enamel and dentin. Lesions composed of similar elements, in which inductive change has resulted in the deposition of dentin alone or dentin plus enamel, dentin plus enamel are termed ameloblastic fibrodentinoma and ameloblastic fibrodontoma, respectively.[1]

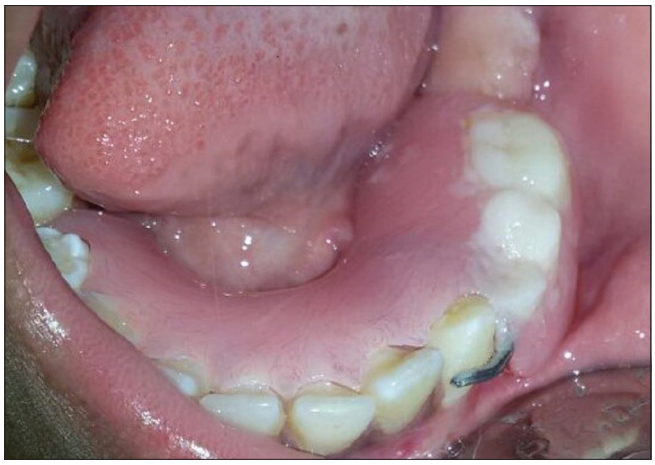

Figure 7: Prosthesis given to the patient posthealing as a space maintainer

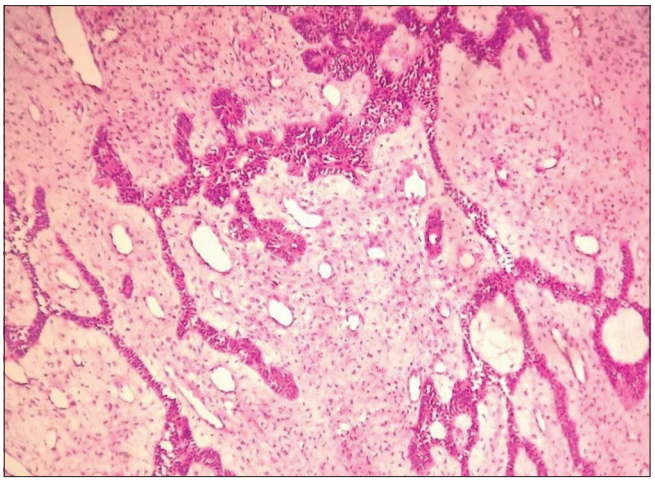

Figure 8: Strands and cords of epithelium in ectomesenchymal tissue stroma

Ameloblastic fibroma was first reported by Kruse in 1891.[3] Initially, it was confused as ameloblastoma for many years and was classified first time as a separate entity by Thoma and Goldman in 1946;[4] 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"[5] and was classified as ameloblastic fibroma under the heading of odontogenic epithelium with odontogenic ectomesenchyme with or without hard tissue formation in 2005.[6]

Ameloblastic fibroma predominantly occurs in children and young adults, with an average age being 14.6–15.5 years,[7] youngest of which was found in a 7-week-old infant,[8] with no gender predilection.[7] These reports were in accordance with our case, wherein the patient was 11 years old.

The position of erupting teeth was disturbed in our case, with radiographic evidence of the left mandibular third molar seen very high in the subsigmoid region. The follicle of the developing tooth might have displaced superiorly due to the expansion of the tumor. This finding was also seen in earlier reports.[7]

The lesion may resemble a dentigerous cyst radiographically, due to the involvement of impacted tooth/teeth with the lesion, but on sectioning the surgical specimen, a yellow/gray firm tissue has been found.[9] It is, however, difficult to make a distinction between multilocular ameloblastic fibroma and ameloblastoma radiographically,[9] and hence, a preoperative biopsy is required to confirm the diagnosis.

Ameloblastic fibroma can be treated more conservatively than ameloblastoma, and the same was advocated in our case with complete enucleation of the tumor along with the removal of impacted teeth while preserving the lower border of the mandible.

However, some authors suggest a more aggressive treatment like segmental mandibulectomy due to its recurrence rate of 18.3%.[10]

Our case, with 1 year of follow-up, showed no signs of recurrence both radiographically and clinically and had a good ingrowth of bone.

The patient was also provided with a temporary removable prosthesis till the time the growth ceases. The prosthesis will also act as a space maintainer.

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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