Ameloblastic fibroodontoma or complex odontoma: Two faces of the same coin

Akhilesh Kumar Singh, Indu Bhusan Kar, Niranjan Mishra, Parikshit Sharma

ABSTRACT

An ameloblastic fibroodontoma (AFO) is a rare odontogenic tumor of mixed dental tissue origin. It exhibits histological features of ameloblastic fibroma and complex odontoma. AFOs are usually found to be asymptomatic and are most often discovered on routine radiography. Sometimes their presence is suspected due to missing permanent dentition. We report a case of an 18-year-old female patient with missing mandibular molars on the left side associated with a giant complex odontoma. Treatment included surgical excision of the tumor followed by reconstruction with iliac crest graft. Histopathological study revealed it as an AFO, to our surprise.

Key words: Ameloblastic fibroodontoma, complex odontoma, mandible, odontogenic tumor

INTRODUCTION

Ameloblastic fibroodontomas (AFOs) are slow-growing, benign tumors developing from the odontogenic epithelium and ectomesenchyme. They are usually found to be asymptomatic and are most often discovered on routine radiography. The clinical features are painless swelling of the jaw, an asymmetrical face, missing permanent teeth, and displaced or impacted tooth. Radiographically, such a tumor appears as a well-circumscribed, expansile radiolucency that generally contains solitary or multiple small radiopaque foci. The presence of radiopaque material ranging from small spots to extensive compact masses in the center of the tumor image is common. Management includes surgical removal of the mass followed by reconstruction of bone defects.

We present a case of an 18-year-old female with giant complex odontoma present in the body of the mandible leading to an impacted mandibular third molar. On histopathological examination, it was diagnosed as an AFO.

CASE REPORT

An 18-year-old female presented to our unit with the complaint of a painless swelling on the left side of the lower jaw for the last 3 years that seemed to show a progressive increase in size. On examination, a firm, diffuse, nontender swelling of size 9 × 5 cm involving the left body of the mandible was observed. Radiographically, such a tumor appears as a well-circumscribed, expansile radiolucency that generally contains solitary or multiple small radiopaque foci. The presence of radiopaque material ranging from small spots to extensive compact masses in the center of the tumor image is common.

Management includes surgical removal of the mass followed by reconstruction of bone defects. On intraoral examination, a small hard tissue projecting over the posterior alveolus was present with normal surrounding mucosa. To our surprise, the left mandibular molars were missing. This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

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cortical expansion with an obliterated vestibular area. The orthopantomogram (OPG) showed a well-defined radiopaque mass of size 3 × 6 cm present over the left body of the mandible. An impacted third molar was present below the mass just above the inferior border [Figure 3]. The diagnosis of complex odontoma was made.

We planned surgical removal of the tumor along with the impacted third molar under general anesthesia. The tumor was approached via submandibular incision, followed by layer-wise dissection to reach the inferior border of the mandible. After reflection of the periosteal layer, the expanded buccal cortex was seen. With the help of a chisel and mallet, the outer cortical bone overlying the tumor was then removed. The tumor was excised with 0.5-cm bone margins, along with the impacted molar. The lingual cortical bone was found to be intact [Figures 4 and 5]. The defect was measured to be approximately 6 cm in length. The reconstruction of the defect was done with nonvascularized corticocancellous iliac crest bone, which was taken from the contralateral side [Figure 6]. The fixation of the graft was done with 2-0 Vicryl sutures to prevent any unnecessary hardware fixation or thermal injury to it. After achieving proper hemostasis, closure was done in layers. Postoperative recovery was absolutely uneventful. Postoperative antibiotics and analgesics were given for 1 week. One week post operation, healing over both the donor and recipient sites was found to be satisfactory, and the sutures were thus removed. To our surprise, histopathological examination revealed the tumor as an AFO [Figure 7]. The patient was kept under regular follow-up for 6 months and, to add to our delight, there were no signs of graft failure or loco regional recurrence.

**DISCUSSION**

According to the World Health Organization (WHO), an AFO is a benign epithelial odontogenic tumor with
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odontogenic mesenchyme. It arises from an exuberant proliferation of the dental lamina or its remnants. A few authors suggest the ameloblastic fibroma and the ameloblastic fibrodentinoma as its precursors. A long-standing case of AFO may progress to complex odontoma.\(^4\) It is an asymptomatic, slow-growing tumor mostly associated with an unerupted tooth. In our case, the permanent left mandibular molars were missing. AFO usually affects children or young adults, with no specific sex predilection. Slootweg reviewed 50 cases with this condition, for which the mean age was 8.1 years (range 1-20 years).\(^5\)

Radiographically, it appears as a well-circumscribed, expansile radiolucency that generally contains solitary or multiple small radiopaque foci.\(^2\) Large areas of calcification make it impossible to differentiate an AFO radiographically from a complex odontoma.\(^6\) A similar finding was present in our case. Differential diagnoses include lesions with mixed radiographic features, such as immature complex odontoma, calcifying epithelial odontogenic tumor, adenomatoid odontogenic tumor, and ameloblastoma.

Histopathologically, an AFO and a complex odontoma are indistinguishable. The relative arrangement of the soft tissues and the stage of development of the involved tooth are useful criteria for diagnosis. The tumor mass is surrounded by a fibrous capsule and is composed predominantly of a fibroblastic connective tissue matrix containing strands of odontogenic epithelium and immature tooth structures, including enamel and dentin. The connective tissue is moderately cellular, with spindle-shaped fibroblasts. No evidence of malignancy is found.\(^3\)

Treatment includes conservative surgery or enucleation. As it is a noninvasive tumor, recurrence is very rare. However, malignant transformation into ameloblastic fibrosarcoma was reported by Howell and Burkes.\(^7\)

**Conclusion**

An AFO is an immature variant of complex odontoma, as the clinical and radiographic findings are identical. Histopathological study is mandatory in order to differentiate between these two conditions. We suggest that an AFO is a less-differentiated complex odontoma.

**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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Conflicts of interest
There are no conflicts of interest.

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