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Case Report

Ameloblastic fibroma of mandible- A case report

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ABSTRACT

Ameloblastic fibromas are uncommon mixed benign odontogenic tumors with an overall prevalence of less than 5%. Asymptomatic uniloular lesions can be effectively managed with curettage, multilocular lesions require meticulous enucleation to avoid the risk of relapse. We report a case successful management of an asymptomatic multilocular ameloblastic fibroma with 2 years of follow up.

1. Introduction

Ameloblastic fibroma is a rare, slow growing benign tumor of mixed odontogenic origin, representing less than 5% of odontogenic tumors.[1] It was first described by Krause in 1891, is characterized by simultaneous proliferation of epithelial and mesenchymal tissues without formation of enamel or dentin.[2] It can occur in either anterior maxilla or posterior mandible, often in presence of an unerupted tooth. Smaller lesions are often asymptomatic while larger multilocular lesions are associated with swelling of jaw.[3] Since malignant transformation of ameloblastic fibroma have been documented, early diagnosis based on histopathological and molecular analysis, surgical interventions and close follow up are paramount.[4,5] We report a case successful management of an asymptomatic multilocular ameloblastic fibroma with 2 years of follow up.

2. Case Report

A young patient aged 13 years presented to the Department of Orthodontics for the correction of crowding of upper and lower front teeth. He had unremarkable past medical and Dental history. No abnormalities were detected on extra oral examination. On intraoral examination, there was retained deciduous canine 1C and missing permanent tooth 37. On routine radiographic orthopantamograph (OPG), impacted 13 and 37 was noted. Presence of a well-defined multilocular radiolucency in the mandible, measuring approximately 3*2cm in diameter, extending from crown of 37 to root of 35 anteriorly, superio-inferiorly extending from crest of the alveolar bone to 0.5cm above the lower border of the mandible. Lower border of the mandible was intact. There was disruption of periodontal ligament of 36 and distal of 35. Mild radio-opacities suggestive of calcifications were noted within the radiolucency (Figure 1). The findings were suggestive of ameloblastic fibroma. Patient was referred to Department of Oral and Maxillofacial Surgery for further management. Incisional biopsy was performed under local anesthesia and the histopathology report suggestive of ameloblastic fibroma.

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2.1. Surgical management

Under General anesthesia with nasotrachael intubation, full thickness mucoperiosteal flap was raised from the left lower first premolar region to the retromolar pad (Figure 2). Buccal plate in the area of tumor was removed followed by complete enucleation of the tumor (Figure 3). Flap was sutured with 3-0 vicryl with a combination of vertical mattress & simple interrupted. The excised specimen was sent for microbiological examination revealed multiple fragmented tissue with small islands and cords of markedly attenuated ameloblastic epithelium in two cells thick within dense collagenous immature stroma. The peripheral cells enclose a central core resembling stellate reticulum with occasional dentin and cementum production (Figure 4). The findings confirmed the diagnosis radiographic differential diagnosis of ameloblastic fibroma. Postoperative OPG taken at 1 year post surgery revealed healing of bone at the left posterior mandibular region with normal cortical bone formation (Figure 4). Patient was further followed up for 2 years without any reported recurrence.

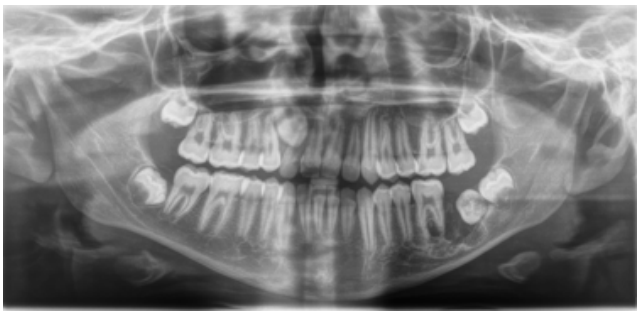

Figure 1: Orthopantomo graph showing impacted teeth along with multilocular radiolucency in left mandible

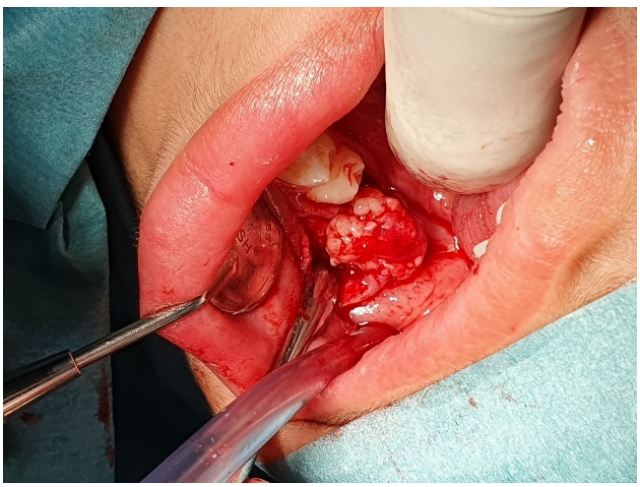

Figure 2: Localization of ameloblastic fibroma in the posterior left mandibular region.

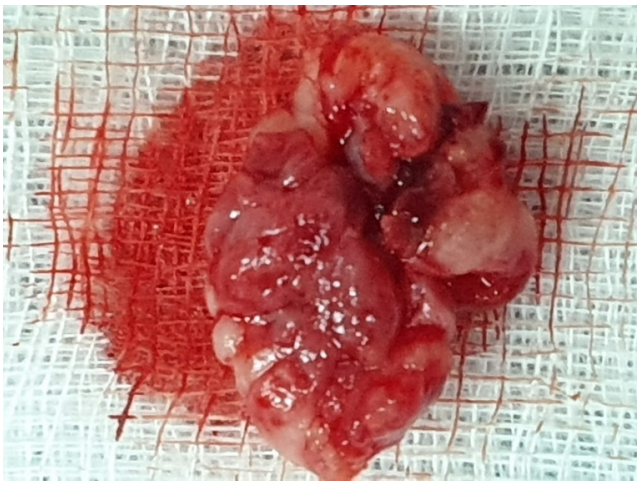

Figure 3: Macroscopic appearance of enucleated ameloblastic fibroma specimen.

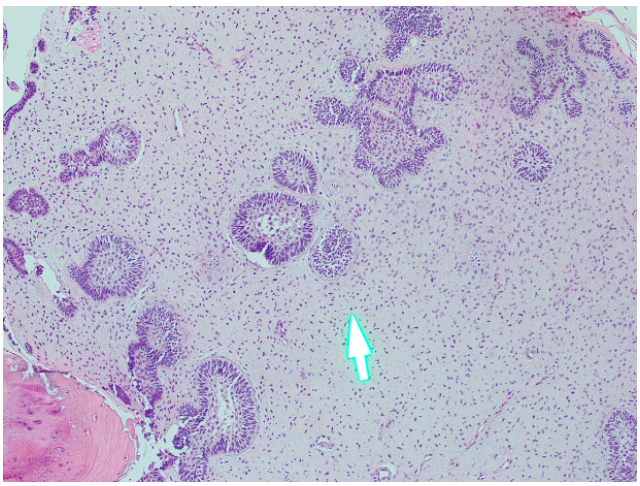

Figure 4: Histopathologic image showing small islands and cords of markedly attenuated ameloblastic epithelium within dense collagenous immature stroma.

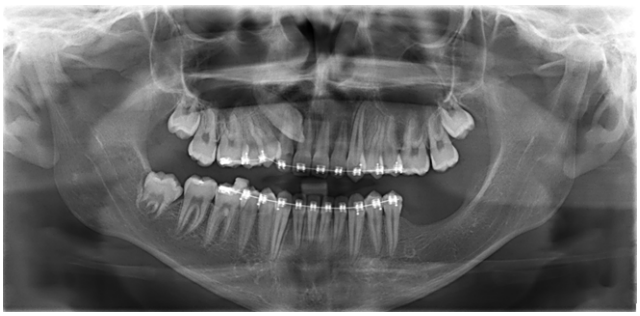

Figure 5: Orthopantomo graph showing healing of bone at 1 year follow up

3. Discussion

Ameloblastic fibroma are uncommon mixed benign odontogenic tumors with a prevalence of 1.5 to 4.5%, are characterized by proliferating odontogenic epithelium and cellular ectomesenchymal tissue resembling dental papilla without hard tissue formation.[6] It was first described in late 1800s by Kruse, by late 1900s it was classified as mixed neoplasm by the World Health Organization.[7] They are often diagnosed within the 2 decades of life with male predominance. Although ameloblastic fibroma can occur either in maxilla or mandible, mandibular posterior region is more susceptible (~80%), particularly in the deciduous second molar or first permanent molar region in the presence of impacted teeth.[3]

Radiographically, ameloblastic fibroma appears as a well-defined unilocular or multilocular radiolucency with sclerotic borders. Unilocular radiolucencies are most often seen in asymptomatic patients and detected during routine radiography, whereas symptomatic patients present with multilocular lesions along with mandibular swelling.[8] In our case, radiographic lesion was incidentally identified on a routine radiograph. Because of association with an unerupted or impacted tooth, ameloblastima, dentigerous cyst, odontogenic keratocyst, central giant cell granuloma histiocytosis should always be considered as differential diagnosis.[9]

Unlike other common odontogenic tumors, ameloblastic fibroma does not infiltrate to bone and can be easily separated from bone. Therefore, conservative management is often preferred. Enucleation with curettage remains the standard treatment for odontogenic tumor including ameloblastic fibroma. While, smaller unilocular lesions can be managed with aggressive curettage, larger multilocular lesions for a small unilocular lesion to wide local excision for a large multilocular lesion.[10,11] In our case, considering the age of patient, benign clinical behavior of tumor as confirmed from radiographic and histological features, we carried out complete enucleation with long term follow up.

Prognosis of ameloblastic fibroma is good with recurrence reported in approximately 20% of cases. However, reports of malignant transformation into ameloblastic fibrosarcoma, although rare, has been well documented. Approximately one third of malignant transformation is reported in patients with recurrent tumors with dysplastic changes.[4,5] Close monitoring, rigorous follow up and molecular analysis of tumor tissue when is doubt are essential in postoperative care. In our case, microscopic examination did not reveal any characteristics of malignant transformation with no evidence of recurrence at 2 year follow up visit.

4. Conclusion

Asymptomatic ameloblastic fibroma can be effectively managed with complete enucleation. Due to increased risk of malignant transformation, particularly in relapsed cases, a strict long term follow up is necessary.

5. Source of Funding

None.

6. Conflict of Interest

None.

References

1. Verma N, Neha. Ameloblastic fibroma or fibrosarcoma: A dilemma of oral surgeon. *Natl J Maxillofac Surg*. 2016;7(2):191–3.
2. Vij R, Vij H. Ameloblastic fibroma: an uncommon entity. *BMJ Case Rep*. 2013;p. bcr2013010279. doi:10.1136/bcr-2013-010279.
3. Nasir A, Khare A, Ali I, Khan I. Ameloblastic fibroma: A case report. *J Oral Maxillofac Pathol*. 2023;27(1):60–3.
4. Kousar A, Hosein MM, Ahmed Z, Minhas K. Rapid sarcomatous transformation of an ameloblastic fibroma of the mandible: case report and literature review. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2009;108(3):80–5.
5. Ramakrishnan DS, Gouthaman SS, Muthusekhar MR. Ameloblastic fibrosarcoma transformation from ameloblastic fibroma. *Natl J Maxillofac Surg*. 2022;13(1):145–9.
6. Chen Y, Wang JM, Li TJ. Ameloblastic fibroma: A review of published studies with special reference to its nature and biological behavior. *Oral Oncol*. 2007;43(10):960–9.
7. Kramer IR, Pindborg JJ, Shear M. The World Health Organization histological typing of odontogenic tumours. Introducing the second edition. *Eur J Cancer B Oral Oncol*. 1993;298(3):169–71.
8. Nelson BL, Folk GS. Ameloblastic fibroma. *Head Neck Pathol*. 2009;3(1):51–3.
9. Castro JFD, Correia AV, Santos LA, Guerra LA, Ramos-Perez FM, Perez DE. Ameloblastic fibroma: A rare case appearing as a mixed radiographic image. *J Clin Exp Dent*. 2014;6(5):583–590.
10. Tozoglu S, Hatipoglu M, Aytekin Z, Gurer EI. Extensive ameloblastic fibroma of the mandibula in a female adult patient: A case report with a follow-up of 3 years. *Eur J Dent*. 2016;10(1):139–43.
11. De Campos W, Esteves CV, Paiva GA, Zambon CE, Rocha AC, Lemos CA, et al. Successful Management of a Gigantic Ameloblastic Fibroma: A 12-Year Follow-up. *Ann Maxillofac Surg*. 2019;9(1):197–200.

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