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Case Report

Ameloblastic Fibroma of the Mandible. Case Report

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Abstract

Ameloblastic fibroma (AF) is an extremely rare true mixed benign tumor that can occur either in the mandible or maxilla [5]. It is frequently found in the posterior region of the mandible, often associated with an unerupted tooth [6]. It usually occurs in the first two decades of life with a slight female predilection, causing delay in tooth eruption or altering the eruption sequence.

Keywords: Ameloblastic Fibroma; Mandible; Maxilla

Introduction

The posterior mandible is affected in 70%of cases [1]. Radiographically, either a unilocular or a multilocular lesion is observed [1] Histopathologically, AF consists of odontogenic epithelium in the dental papilla-like background without dental hard tissue formation [7]. Approximately 45% of ameloblastic fibrosarcomas develop in the setting of recurrent ameloblastic fibroma [1]. Clinical feature: Slow growing asymptomatic lesion causing eventual expansion of the jaw [2], Typically found in the first 2 decades [2]. Males and females are equally affected [2]. Most of the lesions appear in the mandible, with majority occurring in the posterior region [2] occurs in both the jaws, but site of predilection ismandible, especially the third molar area [3]. Relative distribution of ameloblastic fibroma in the jaws is as follows: Maxilla-4% in anterior and premolars, 23% in posterior region [3]. Mandible-4% in anterior and premolar, 69% in molar region [3].

Enucleation and curettage result in successful excision of unilocular, encapsulated lesions. Extensive or multilocular lesions are more definitively managed by RsCD or RcCD from the outset, if surgically indicated [4]. Huge lesions require RcCD and bonegraft if anatomic integrity of the jaw is so compromised that pathologic fracture may result from extirpative surgery [4]. Studies of cases indicated that approximately 45% of ameloblastic fibrosarcomas evolve from untreated or incompletely treated ameloblastic fibroma (see discussion of odontogenic sarcoma) [4]. Long-term clinical and radiographic follow-up evaluation is required; 10 years is not an unreasonable period [4].

Case Report

Patient 20 years old, male referred from other dentist to my center in Saywun city,with a chief complaint of slowly progressive swelling on the left side of his lower posterior jaw. Past history of illness; He was treated as dental pain in a lower 1st and 2nd premolar, endodontic treatment was done for both teeth, after 6 months the pain comeback, the dentist extract the lower 2nd premolar and refer the patient to us. Examination was done: On intraoral examination, the left lower buccal vestibule was obliterated due tothe expansion of the buccal cortical plate. The mucosa over the swelling was normal,except for slight blanching due to expansion of the buccal cortical plate. The lesion is seen extending from the canine to the medial aspect of 2nd molar, measuring 4 cmin size. On palpation, the swelling was slightly tender Panoramic x ray was done.

Showed a unilocular radiolucent area with well-defined borders, involving the posterior aspect of the left mandible. The lesion was measuring approximately 4 cmin size. extended to near a lower border of the mandible Aspiration was done, it is negative, indicating a non-cystic lesion. All investigations were done, and I decided a incisional biopsy under local anesthesia. The incisional biopsy was done, and the result was AMELOBLASTIC FIBROMA.

Patient come to Sanaa and we advised him to do CBCT.

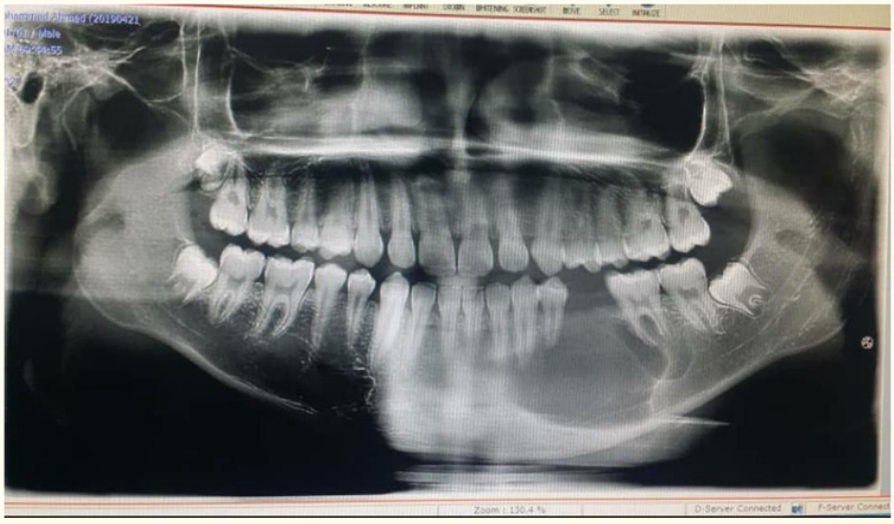

Figure 1: Panorama x ray Show the size and location of the lesion.

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CLINICAL DATA
Mandibular bone cystic lesion.

NATURE OF SPECIMEN
Incisional biopsy.

GROSS DESCRIPTION
Specimen received consists of multiple variable size soft tissue pieces measuring 2x2x1cm in aggregate; totally submitted.

MICROSCOPIC DESCRIPTION
Serial sections examined from the specimen received reveal fragments of tumor growth, composed of strands and buds of epithelial cells embedded in a cellular primitive connective tissue stroma.
No evidence of cellular atypia, atypical mitotic figures or malignancy in sections examined.

DIAGNOSIS
Mandibular bone cystic lesion, Incisional biopsy; AMELOBLASTIC FIBROMA. No Malignancy.

Thanks for reference
Dr. WADDAH SALEH
Pathologist
Dr. WAEL AL-ABSI
Pathology Specialist

Figure 2: The result of biopsy.

Figure 3: CBCT Preoeration

Patient prepared for operation under GA. Operation was done, intraoral approach. Extraction for 1st premolar and 1st and 2nd molar and crystal incise for the flap wasdone, other vertical incise of anterior region at the incisors teeth.

The mucoperiosteal flap was reflected and osteotomy for the cortical plate of mandible and exposed the lesion. Enucleation for the lesion was done and removed it as one piece (it was encapsulated) and aggressive curettage was done + superficial osteotomy by electric micromotor + irrigation with H_2O_2 with protect the IAN andpreserved it. Suturing was done by 3/0 vicryl. The lesion was sends for histopathological examination.

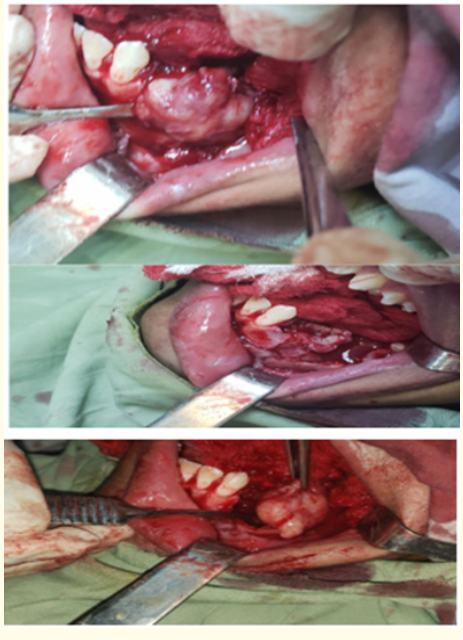

Figure 4,5 and 6: During operation.

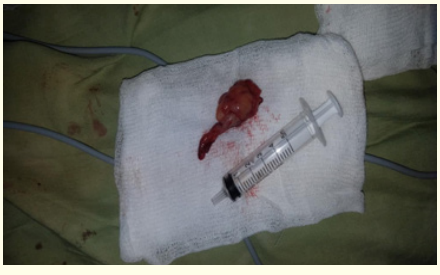

Figure 7: Excsioned tumor.

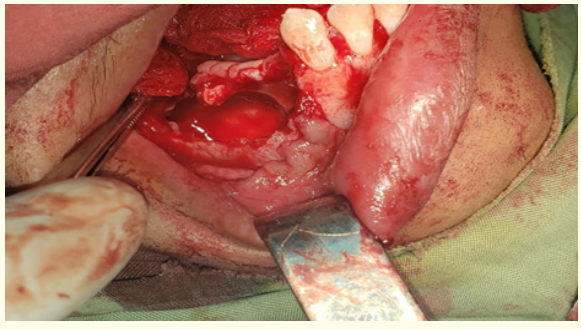

Figure 8: The site of the tumor post excision.

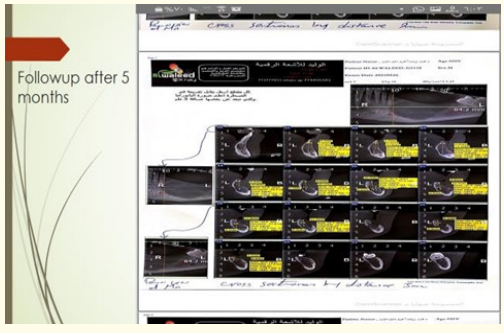

Figure 9: CBCT Follow up after 5 months show a good healing.

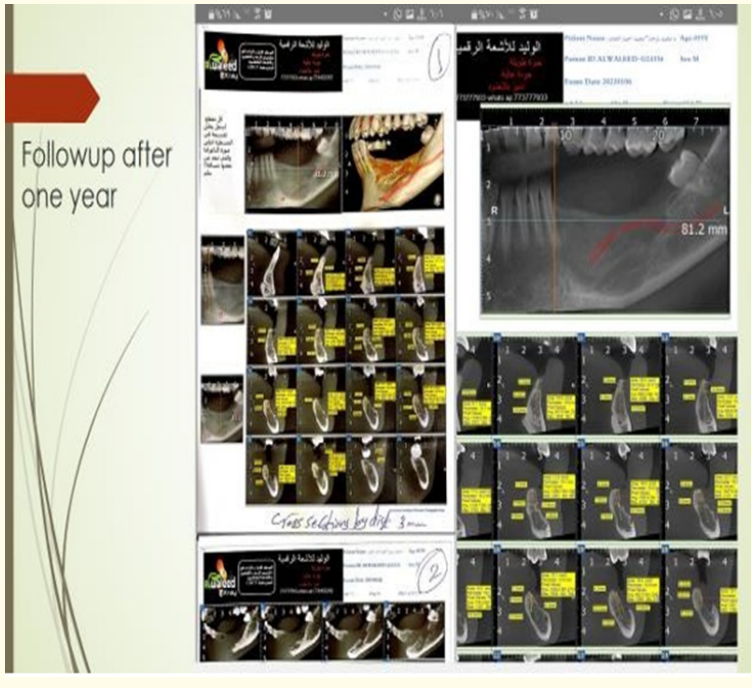

Figure 10: CBCT Follow up after one year show a new bone formation.

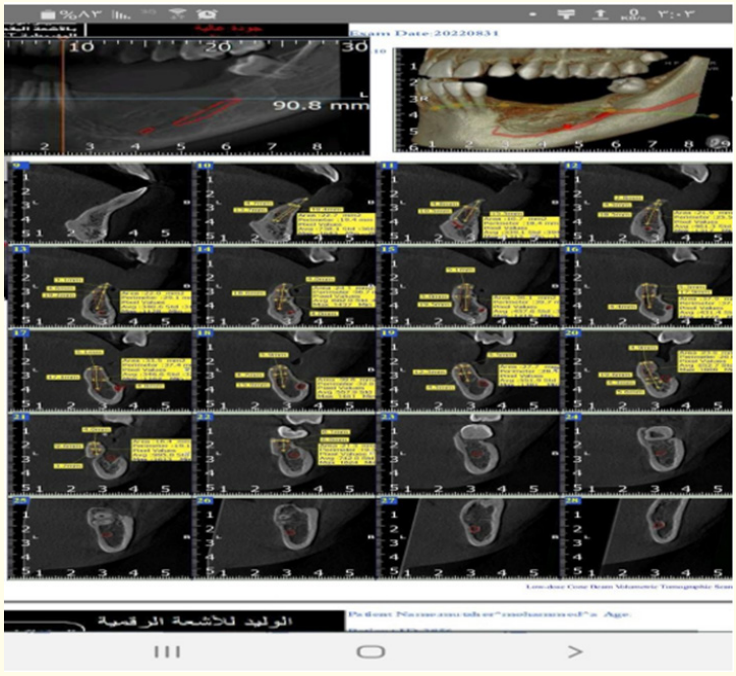

Figure 11: CBCT Follow up after 1year and 8 monthes Show a new bone formation.

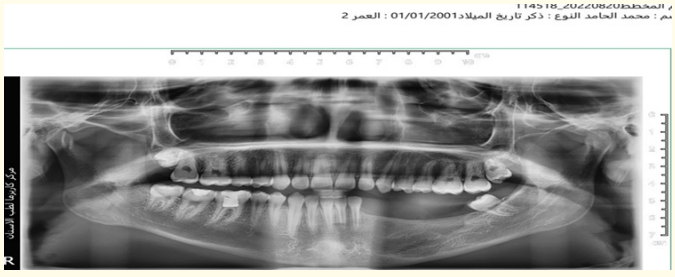

Figure 12: Panorama x ray shows new bone formation.

After tow year and 3 monthes I decided to do dental implant. The plan of implant was achieved depending of CBCT

The dental implants were done. 4 dental implant and bone graft used.

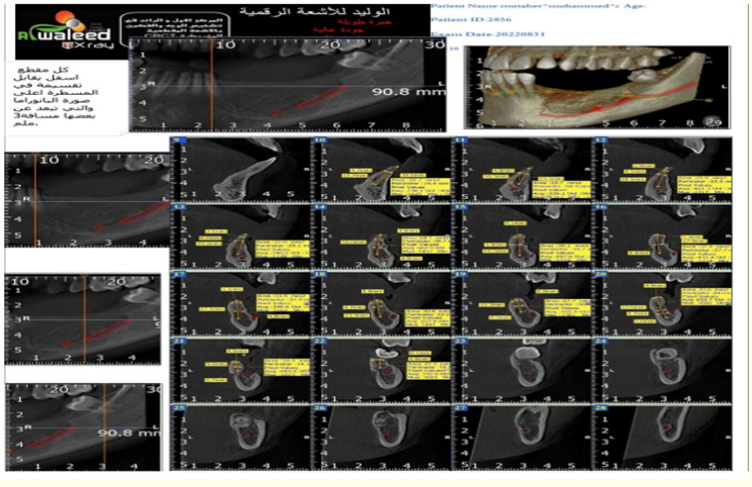

Figure 13: CBCT before dental implant.

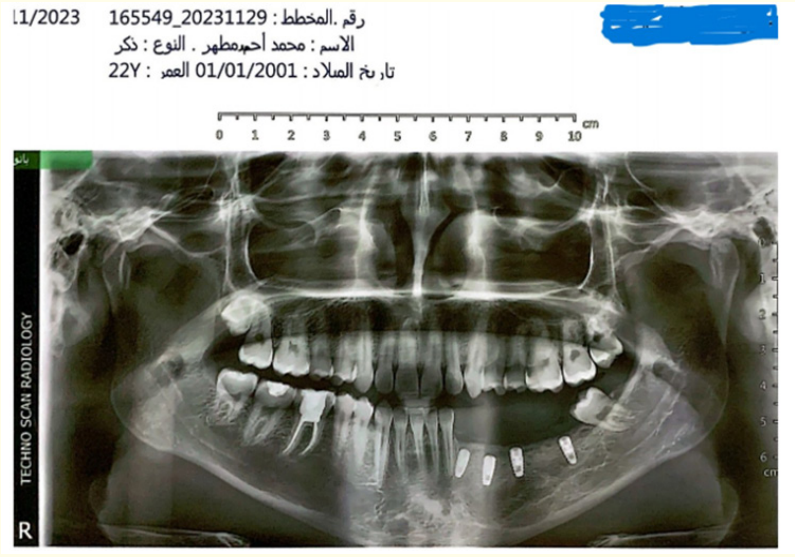

Figure 14: Post dental implant.

Discussion

AF is an uncommon odontogenic tumour. In general, it does not present with dentalhard tissues. If the lesion is similar to AF but contains dentinoid tissue or dentin without or with enamel formation, it should be designated under the names 'ameloblastic fibrodentinoma' (AFD) and 'ameloblastic fibroodontoma' (AFO), respectively [7,9,10]. The presentation of these different tumours may be due to the degree of inductive changes and dental hard tissue formation of the same neoplasticentity (the 'continuum' concept) [8].

It is believed that odontogenic epithelium in AF arises from the primordial enamel organ, and the stromal component originates from the dental papilla [13]. AF in the mandibular location, chiefly in the posterior mandible, is more common than in the maxillary counterpart. The patients usually present with a hard swelling, but intra-oralulceration, pain, tenderness, or drainage may also be observed. Radiographically, unilocular radiolucency with a smooth outline is associated with asymptomatic patients, while cases with jaw swelling generally have the multilocular, radiolucent pattern. Most of the AF lesions exhibit radiopaque borders [7,9,11].

A progressive swelling seems to be only a noticeable symptom of an enlarging lesion.This addresses the importance of routine oral examination in childhood and adolescence which should be carried out thoroughly for both soft and hard tissues of the oral cavity. Had the patient undergone routine check-up, the lesion would have been detected earlier before it developed into a voluminous size [8].

The name of AF indicates a non-aggressive behaviour. However, a large series of AFrevealed that its recurrent rate at 10 years after operation was approximately 70% [7]. Malignant transformation of AF has been reported sporadically in recurrent AF or after multiple surgeries [10,12,14,15]. Patient age at the presentation (> 22 years old) was found to be the only potential risk of malignant AF [7]. Therefore, based on evidence at present, close and long-term follow-up is indeed crucial. Special care should be taken in recurrent cases with regard to malignant transformation. However,these data must be interpreted with caution because malignant transformation of a benign tumour may be easily and frequently accepted for publication (so-called 'publication bias'), resulting in an exaggerated and overestimated incidence [8].

Management of AF varies between reports. In general, a conservative approach, such as enucleation with curettage of the surrounding bone, should be applied for young patients,this was done for our patient. No recurrence commonly results from complete removal of the tumour [7,9,10]. The is no recurrence in our patient may be due to no aresidual tumour following the conservative surgery. Limited surgical access in the posterior mandibular region complicates complete tumour removal [8]. In the present case we did not use bone graft or PRF, and during follow up we noticed a new bone formation.

CT scan is of clinical value during both the treatment planning and the surveillance ofrecurrence, and determine range of bone structure.

Conclusions

The patient reported here presented an uncommon feature of AF: a voluminous lesionoccupying the posterior portion of the mandible. However, he was relatively young atthe time of presentation. We, therefore, decided to apply a conservative approach anda 'wait and see' protocol for this patient [8].

Because of its high recurrent rate and a possibility of malignant transformation, theterm 'benign tumour' in case of AF should not falsely impart a simultaneous designation of 'non-aggressive'. Complete excision with close follow-up is highly recommended [8].

Bibliography

1. Oral and Maxillofacial Surgery, Peterson
2. SM BALAJI. "Textbook Oral and Maxillofacial Surgery"
3. N E E L I M A A N I L MALIK. "Oral and Maxillofacial Surgery"
4. FONSECA. "Oral and Maxillofacial Surgery"
5. Vasconcelos BC., *et al.* "Treatment of large ameloblastic fibroma: A case report". *Journal of Oral Science* 51 (2009): 293.
6. Neville BW., *et al.* "2nd edition. Noida: Saunders (IndianPrint); 2004. Textbook of oral and maxillofacial pathology (2009): 626-627.
7. Chen Y., *et al.* "Ameloblastic fibroma: A review of published studies with special reference to its nature and biological behavior". *Oral Oncology* 43 (2007): 960.
8. Poramate Pitak-Arnnop., *et al.* "Extensive Ameloblastic Fibroma in an Adolescent Patient: A Case Report with aFollow-Up of 4 Years". *European Journal of Dentistry* 3.3 (2009).
9. Poramate Pitak-Arnnop., *et al.* "The World Health Organization Classification of Tumours". Pathology and Genetics of Head and Neck Tumours. Lyon: IARC Press (2005): 308.
10. Chen Y., *et al.* "Ameloblastic fibroma and related lesions: a clinicopathologic study with reference to their nature and interrelationship". *Journal of Oral Pathology and Medicine* 34 (2005): 588-595.
11. McGuinness NJ., *et al.* "Ameloblastic fibroma ofthe anterior maxilla presenting as a complication of tooth eruption: a case report". *Journal of Orthodontics* 28 (2001): 115-118.
12. Takeda Y. "Ameloblastic fibroma and related lesions: current pathologicconcept. *Oral Oncology* 35 (1999): 535-540.
13. DeLair D., *et al.* "Ameloblastic carcinosarcoma ofthe mandible arising in ameloblastic fibroma: a case report and review of the literature". *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontics* 103 (2007): 516-520.
14. Williams MD., *et al.* "Anaplastic ameloblastic fibrosarcomaarising from recurrent ameloblastic fibroma: restricted molecular abnormalities of certain genes to the malignant transformation". *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and Endodontics* 104 (2007): 72-75.
15. Kobayashi K., *et al.* "Malignant transformation of ameloblastic fibroma to ameloblastic fibrosarcoma: case report and review of the literature". *Journal of Cranio-Maxillofacial Surgery* 33 (2005): 352-355.