

Unilateral Mandibular Swelling in a Young Female Patient: A Case Report

Dr. Malvika Amin, Dr. Prasanna Kumar Rao, Dr. Raghavendra Kini, Dr. Roopashri Kashyap, Dr. Gowri Bhandarkar, Dr. Ujwala Shetty, Dr. Prarthana Kishore, Dr. Tejkiran Shetty

Abstract:- Aneurysmal bone cyst (ABC) is a benign lesion of bone which is uncommon in the craniofacial region. It is a pseudocyst which is manifested by rapid growth, bony expansion and facial asymmetry. In the present case report we illustrate a case of Aneurysmal bone cyst in a 14 year old female patient affecting the body of the mandible with expansion and thinning of buccal and lingual cortical plates.

Keywords:- Mandibular, Aneurysmal bone cyst, Unilateral.

I. INTRODUCTION

An aneurysmal bone cyst (ABC) is a benign osteolytic, rapidly growing, expansive, hemorrhagic bone lesion¹. It was first described by Van Arsdale as an ossifying fibroma in 1893. Jaffe and Lichtenstein were the first to recognize ABC as an intraosseous, osteolytic lesion, chiefly affecting the metaphyseal region of long bones and vertebrae. 50% of ABC's arise in the long bones and twenty percent in vertebral column. In 1958, Berier and Bhaskar first described a case of ABC in the jaws. They favor long bones, such as the femur, tibia and spine. It is more common in mandible than maxilla with an estimated ratio of 2:1².

The most commonly involved sites includes the mandibular body and ramus. Aneurysmal bone cyst is more common in first three decades with a peak from 10 to 20 years. Sex incidence varies in literature with a tendency towards equal distribution between males and females³. ABC has a controversial etiology. According to Steiner and Kantor, the ABC can evolve as either a primary or a secondary lesion associated with other bone diseases. Aneurysmal bone cysts have varying radiological appearances and should be considered in the differential diagnosis of any unilocular or multilocular radiolucency of the jaws and any mixed radiopaque-radiolucent lesion⁴.

II. CASE REPORT

A 14 year old female patient reported to Department of Oral Medicine and Radiology with chief complaint of swelling in the lower right back tooth region since two months. History of swelling in the lower right back tooth region since two years, for which surgery was done two years back. Patient noticed reappearance of the swelling two months, for which she visited a dentist seven days back for a check-up and primary investigation was done and was diagnosed as recurrence of the same swelling. Presently there is no history of associated pain.

On extraoral examination, gross facial asymmetry was noted. Diffuse swelling noted on the lower third of the face, on right side extending superiorly from the ala tragus line till approximately 1cm below the lower border of the

mandible, Mediolaterally from the symphysis region to the angle of mandible [Figure 1]. Skin over the swelling appears to be normal. No change in color of the overlying skin. On palpation, there was no rise in local temperature. The swelling was hard in consistency and non tender. On intraoral examination, there was erupting tooth seen with respect to 13, 14, 15, 23, 24 and 33.

Pre-shedding mobility noted with respect to 55, 74, 75. On local examination, Swelling was seen in the buccal vestibule extending from 43- 46 region. Space was noted between 45 and 46. Lingually and distally tilted 45. 46 Pushed distally. Buccal vestibular obliteration seen [Figure 2]. Expansion of buccal and lingual cortical plates. Area of decortication noted. Surface of the swelling appears even. On palpation, the swelling was firm to hard in consistency and non tender.

Lateral mandibular occlusal was taken for radiological investigation and it revealed a radiolucent lesion, from the symphysis region extending beyond the 47 region. Buccal and lingual cortical plate expansion was seen [Figure 3]. Orthopantomograph revealed well defined radiolucent lesion seen extending from the periapical region of 31 to 47 with a radiopaque septa internally giving a typical honey comb appearance. Resorption of roots with respect to 44, 45, 46 and displaced teeth were noted with respect to 44, 45, 46.[Figure 4].

Cone Beam Computed Tomograph image, Axial and Coronal section revealed well defined radiolucency seen with multiple thin radiopaque septa and thinning of buccal and lingual cortical plates were seen. Erosion of buccal and lingual cortical plates were seen. Resorption of roots of 44 and 45 were noted. [Figure 5]. Chairside Fine needle aspiration was done which reveals blood color fluid which was indicative of Aneurysmal Bone Cyst [Figure 6].

III. DISCUSSION

The term "aneurysmal" refers to the "blow out" effect or expansion of the affected bone that appears in such type of lesions. The ABC of the jaw is a pseudocyst lacking epithelial lining. It comprises 5 % of all the lesions of cranial and maxillofacial bones and is most common in those regions of the skeleton where there is both a relatively high venous and marrow content⁵.

ABC can be categorized into three types. Conventional or vascular type (95%) presents as a rapidly growing, expansive, destructive lesion causing cortical proliferation and soft tissue invasion. The solid type (5%) may present as a small asymptomatic lesion noticed as radiolucency on a routine radiograph or as a small swelling. A third form or

mixed variant demonstrates features of both the vascular and solid types⁶.

As compared to maxilla, ABCs most frequently occur in the mandible. ABCs commonly recurred after one year of surgical resection and rarely after 2 years. Thus it is recommended to follow up at least two years of resection⁷.

The pathogenesis of ABC remains unclear. ABCs can be initiated due to reactive body condition, such as increased venous pressure due to vascular malformation or circulatory disorder, which leads to high intraosseous venous pressure, bone expansion, and destruction of the vascular bed. Other studies have suggested that ABCs originate due to preexisting bone lesions, such as hemangioma, fibrous dysplasia, ossifying fibroma, central giant cell granuloma, or chondroblastoma⁸.

ABCs are categorized according to their clinical and radiological behavior as inactive, active, or aggressive. Radiology workup has variable appearing morphology. Typically, it appears as a radiolucent multilocular cyst with an ill-defined internal septations. Multidetector computed tomography (MDCT) and magnetic resonance imaging (MRI) might show the classic multiple cysts with fluid-fluid levels⁹.

Treatment of ABC aims towards complete removal of the lesion. This can prove difficult at times since the some of lesions are often multilocular and may be divided by multiple bony septae¹⁰. The other modalities are percutaneous sclerotherapy, diagnostic and therapeutic embolization, curettage, block resection and reconstruction, radiotherapy and systemic calcitonin therapy¹¹.

IV. CONCLUSION

To conclude, ABC of the jaws can present in varying patterns which are diagnostically challenging as the lesion can be primary or secondary in nature. Histopathological examination of the incisional/ excisional tissue will confirm the association of secondary lesion which needs to be treated accordingly. Further studies on the clonality of the lesion on a large sample size are needed to ascertain its true nature.

REFERENCES

- [1.] Al-Maghrabi H, Verne S, Al-Maghrabi B, Almutawa O, Al-Maghrabi J. Atypical Presentation of Giant Mandibular Aneurysmal Bone Cyst with Cemento-Ossifying Fibroma Mimicking Sarcoma. *Case Rep Otolaryngol.* 2019 ; 27;2019:1493702
- [2.] Motamedi MH, Stravropolous M.F. Large Radiolucent lesion of the mandibular condyle. *J Oral Maxillofac Surg* 1997;55:1300-4.
- [3.] Parvathi Devi, VB Thimmarasa, Vishal Mehrotra, Mayuri Agarwal *J Oral Maxillofac Pathol.* 2011 ;15(1): 105–108.
- [4.] Sun ZJ, Zhao YF, Yang RL, Zwahlen RA. Aneurysmal bone cysts of the jaws: analysis of 17 cases. *J Oral Maxillofac Surg.* 2010;68(9):2122-2128.
- [5.] Motamedi MH. Aneurysmal bone cysts of the jaws: clinicopathological features, radiographic evaluation and treatment analysis of 17 cases. *Journal of Cranio-Maxillofacial Surgery.* 1998; 1;26(1):56-62.
- [6.] H. Arango-Fernández, S. Pineda, N. Elneser, and A. Gómez-Delgado, "Conversion of aneurysmal bone cyst into fibrous dysplasia: a rare pediatric case report," *Journal of Maxillofacial and Oral Surgery,* 2016;15(2),:355–360,
- [7.] Z. J. Sun, H. L. Sun, R. L. Yang, R. A. Zwahlen, and Y. F. Zhao, "Review article: aneurysmal bone cysts of the jaws," *International Journal of Surgical Pathology,* 2009;17(4):311–322.
- [8.] B. M. Fernández, B. G. Medina, A. M. Plaza, A. Aguilar-Salvatierra, and G. Gómez-Moreno, "Aneurysmal bone cyst of the mandible affecting the articular condyle: a case report," *Clinical Case Reports* 2016;4(12): 1175.
- [9.] P. J. Brooks, J. W. Chadwick, M. Caminiti, B. Dickson, and I. Leong, "Primary aneurysmal bone cyst of the mandibular condyle with USP6-CDH11 fusion," *Pathology—Research and Practice* 2019;215(3): 607–610.
- [10.] Kalantar Motamedi MH. Aneurysmal bone cyst of the jaws: Clinicopathological features, radiographic evaluation and treatment analysis of 17 cases. *J Cranio-maxillofac Surg* 1998;26:56-62.
- [11.] Goyal A, Tyagi I, Syal R, Agrawal T, Jain M. Primary aneurysmal bone cyst of coronoid process. *BMC Ear Nose Throat Disord* 2006;6:4.

FIGURES



Fig. 1 A and B: [A] Patient profile with a diffuse swelling [A], *WORMS VIEW* showing swelling in the inferior border [B]



Fig. 2: Buccal and Lingual Cortical expansion in relation to 44, 45, 46

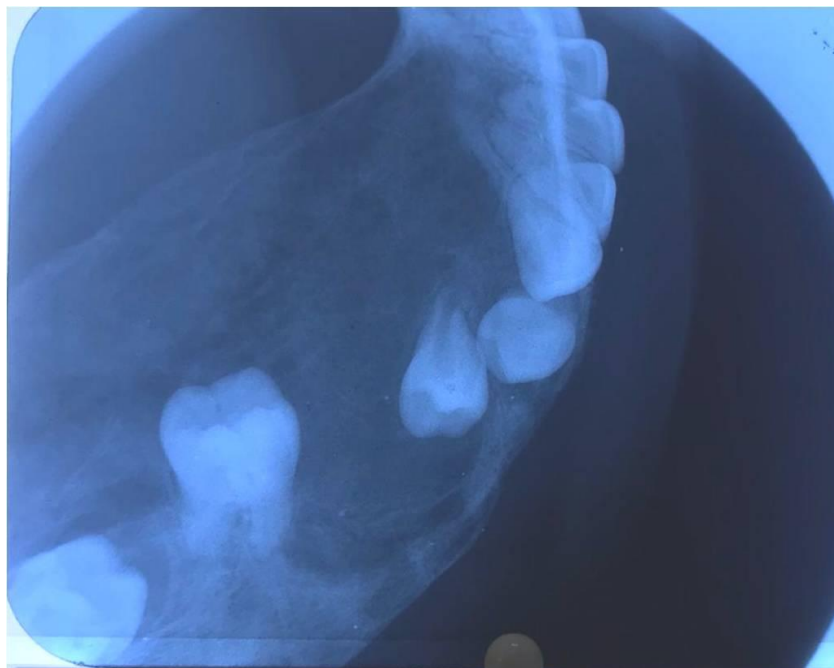


Fig. 3: Occlusal view with lingual and buccal cortical plate expansion.



Fig. 4: OPG reveals well defined radiolucent region with radiopaque septa.



Fig. 5: CBCT : Axial, Coronal, 3D sections.



Fig. 6: FNAC done which SHOWS BLOOD COLOR fluid.