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Case Report

ASYMPTOMATIC ANEURYSMAL BONE CYST IN THE ANGLE OF MANDIBLE - A RARE CASE REPORT

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A B S T R A C T

These rare jaw lesions that are encountered in the body and ramus of the mandible which is commonly reported in the second and third decade of life, Aneurysmal bone cyst (ABC) are characterized by a rapid growth pattern with resultant bony expansion and facial asymmetry but we describe a case of Asymptomatic ABC without clinical findings in a 20 years old male patient affecting the left angle of the mandible. Treatment consisted of surgical curettage of the lesion and specimen is sent for histopathological evaluation.

INTRODUCTION

Aneurysmal bone cyst (ABC) has been recognized since 1893 when it was described as an ossifying hematoma by Van Arsdale. Jaffe and Lichtenstein were the first to recognize ABC as an intraosseous, osteolytic lesion, chiefly affecting the metaphyseal region of long bones and vertebrae. Bernier and Bhaskar described the first case of ABC in the jaws in 1958. (Devi *et al* 2011)

Aneurysmal bone cyst (ABC), is a rare non epitheliazed pseudocyst of jaws which represent about 1.5% of all nonodontogenic and non epithelial cystic of the jaws. Amongst the jaw cysts the ABC is extremely rare with 0.5% prevalence with the average age predeliction is 13 years and 80% of patients are less than 20 years old with no gender predilection The WHO defines ABC as a benign intra-osseous lesion, characterized by blood- filled spaces of varying size associated with a fibroblastic stroma containing multinucleated giant cells, osteoid and woven bone. The characteristic radiological features of ABC in the long bones are well documented as a well-defined expansile radiolucent lesion surrounded by a thin overlying cortex. In contrast the descriptions of ABC in the jaws are conflicting and vary from mainly a unilocular radiolucency to a "ballooned out' multilocular radiolucency with a honeycomb or soap-bubble appearance (Ashish *et al* 2013)

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ABC can be classified into three types. Conventional or vascular type (95%) manifests as a rapidly growing, expansive, destructive lesion causing cortical perforation and soft tissue invasion. The solid type (5%) may present as a small asymptomatic lesion first 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 types. It may be a transitory phase of the lesion because sudden activation or rapid enlargement of stable lesions has been reported (Pelo *et al* 2009)

Case report

A 20 years old male patient reported to the Department of Oral Medicine and Radiology for regular dental check up, On Extraoral and Intraoral examination of maxillofacial region revealed nothing of significance (Fig 1 & 2) during routine radiographic examination an incidental finding on IOPA revealed ill defined radiolucency with sclerotic border extending from distal aspect of apical portion of 37 to left angle of mandible (Fig 3)

Mandibular occlusal radiograph showed mild expansion of the cortical plate (Fig 4) and a cropped panoramic radiograph revealed a large unilocular radiolucency present in the left angle of mandible, extending from the root of left second molar to the ramus region (Fig 5) Computed tomographic examination was performed and revealed a well-circumscribed expansile hypodense lesion, with the epicenter at ramus of mandible and

extending into left angle of mandible in coronal section (Fig 6). The curettage of the lesion was performed under local anesthesia and the tissue was sent for histopathologic evaluation. The microscopic examination revealed multiple bits of tissue showing extravasated RBC,s and few highly irregular haematoxyphilic calcified material. Few vital bony spicules are also seen. There is no lining of epithelium seen which was suggestive of ABC along with radiographic corelation

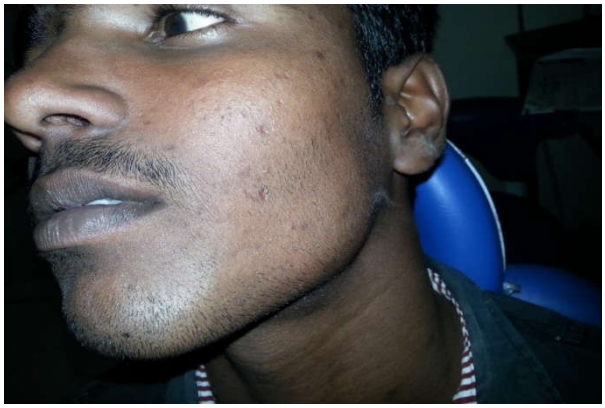

Figure 1 Extraoral View

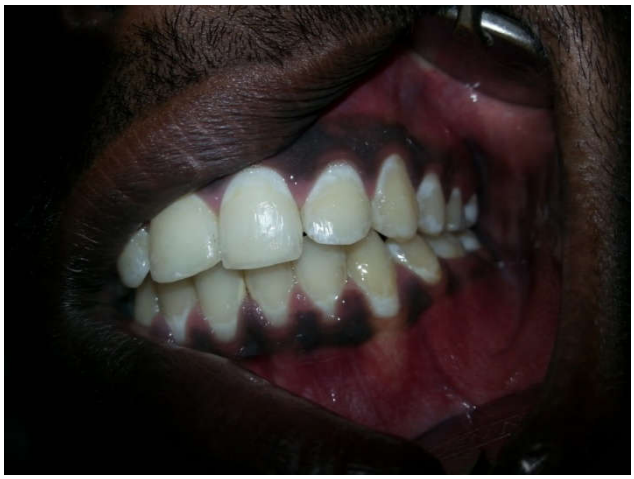

Figure 2 Intraoral View

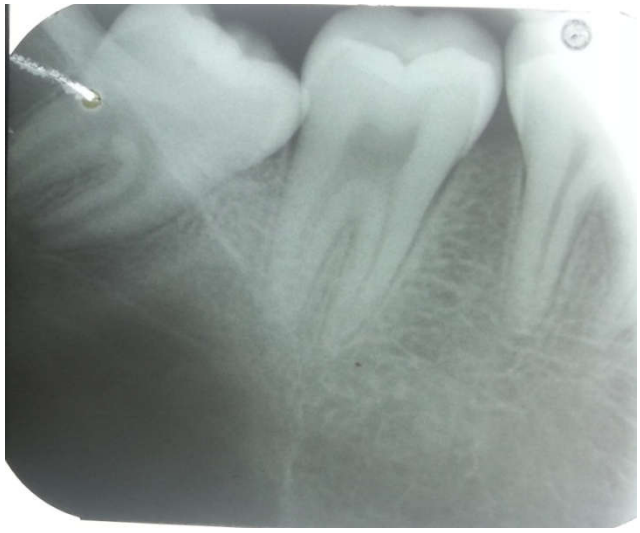

Figure 3 IOPA

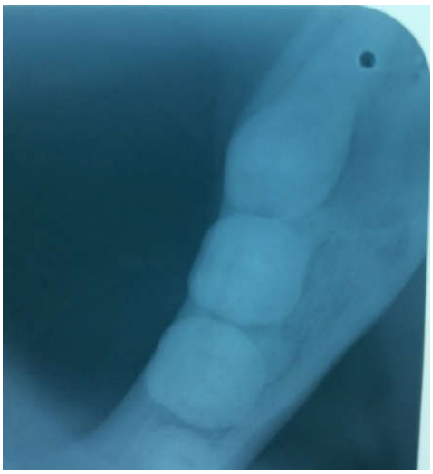

Figure 4 Occlusal View

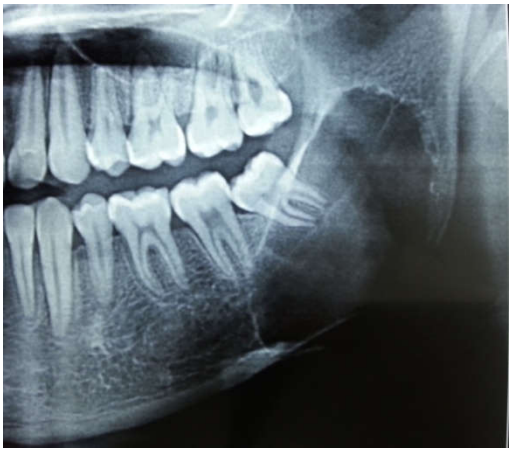

Figure 5 Cropped Panoramic View

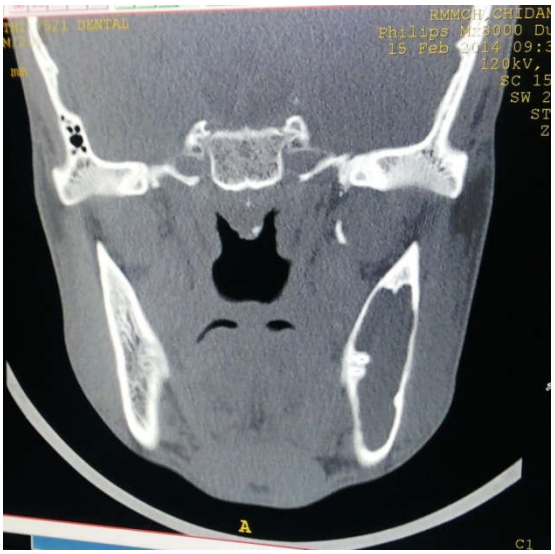

Figure 6 CT Coronal Section

DISCUSSION

The term “aneurysmatic” refers to the “blow-out” effect or expansion of the affected bone that appears in these types of lesions. The ABC of the jaw is a psuedocyst lacking epithelial lining. (Capote *et al* 2009) It comprises 5% of all the lesions of the cranial and maxillofacial bones and is most common in those regions of the skeleton where there is both a relatively high venous and marrow content. This explains the rarity of ABC in the skull bones, in which there is low venous pressure (Devi *et al* 2011)

Aneurysmal bone cyst is usually considered to be a reactive lesion of the bone rather than a cyst or true neoplasm. Most believe that ABC is the result of a vascular malformation within the bone. The cause of the malformation is however a topic of controversy. It is not clear whether the lesion is primary or occurs in a preexisting bone lesion. Eighty percent of the ABCs occur in patients below 20 years of age with no gender predilection.(Boyd 1979) However, studies have claimed a slight female preponderance. However, when present, the mandible is most commonly affected (mandible-maxilla ratio 3:1), with a higher predilection for molar and ramus region.(Behal 2011)

ABC is extremely variable in clinical presentation, ranging from a small, indolent, asymptomatic lesion to rapidly growing, expansile, destructive lesion causing pain, swelling, deformity, neurologic symptoms, pathologic fracture and perforation of the cortex. (Devi *et al* 2011)

Radiographically these lesions are usually unilocular, but long standing lesions may show a "soap-bubble" appearance and may become progressively calcified. Radiographic, differentiation from other expansile lesions may be difficult. CT scan and MRI may not provide clear diagnostic criteria but only outline the extent of the lesion. It appears as Multi-locular cystic structure in the CT with bone window with Presence of liquid both in the CT or MRI. Accumulative pattern in the scintigraphy and in the angiography with radionucleids. Bubble like structure in the MR T2W1. This is similar to the radiographic picture of eosinophilic granuloma, giant cell tumor, non ossifying fibroma, Ewing's tumor, and in older patient metastatic carcinoma or myeloma. (Jose *et al* 2007)

Histologically, ABC consists of many sinusoidal blood-filled spaces set in a fibrous stroma, with multinucleated giant cells and osteoid. Hemosiderin is present in variable amounts and there is evidence of osteoid and bone formation. This description is characteristic of the "classic or vascular" form. The histologic features in our case were consistent with the above-mentioned features. Solid form is the other histological type, which is a noncystic variant with solid gray-white tissue, hemorrhagic foci and abundant fibroblastic and fibrohistiocytic elements with osteoclast-like giant cells, osteoblastic differentiation areas with osteoid and calcifying fibromyxoid tissue. The mixed form demonstrates elements of both vascular and solid types since a normal epithelial lining is lacking, the lesion is also referred to as pseudocyst." (Capote *et al* 2009). The treatment of the ABC is determined by the nature of any associated lesion. There is no uniform treatment and management of ABC due to its varied nature. The usual treatment of choice is curettage as it is a benign lesion, but failure to remove the lesion completely has been associated with a recurrence, although there has been a report of a case whereby the lesion regressed spontaneously.

Some authors have also recommended supplementing curettage with cryotherapy. The defect can be filled up with bone chips prior to cryosurgery. Segmental resections are performed with immediate bone grafting if the lesions have been found to be extensive and cause functional and cosmetic deformities (Ashish *et al* 2013) Curettage may prove difficult at times since the lesions are often multilocular and may be divided by multiple bony septae. Massive bleeding may be encountered as soon as the lesion is entered and will continue until complete curettage is accomplished. Continued bleeding after completion of the procedure indicates incomplete curettage.(Prasad *et al* 2007). A high recurrence rate of 53-66% has been reported for ABC in the jaws. Therefore, a close follow-up of the cases is recommended (Ashish *et al* 2013)

CONCLUSION

Aneurysmal bone cyst of the jaws represents an enigmatic pseudocyst with variable clinicopathological, histological and radiographic presentations, therefore, often posing a diagnostic dilemma. Future advance diagnostic research in ABC is mandatory which would establish diagnosis, support and define different treatment modalities so as to eliminate the problems encountered both by the patient and the dentist.

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