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# Management of an Aneurysmal Bone Cyst of the Mandible - A Case Report

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## ABSTRACT

**Introduction:** Aneurysmal bone cysts recognized since 1893 was described as an ossifying hematoma by Van Arsdale before being recognized by Jaffe and Lichtenstein as an intraosseous, osteolytic lesion in 1942. Bernier and Bhaskar described the first case of ABC in the craniofacial region in 1958.

**Aims:** To find close follow-up is essential to prevent recurrent and relapse.

**Case Report:** It is a benign blood filled bony lesion affecting the long bones of the human skeleton. They manifest rarely in the head and neck region. They often lead to a delay in diagnosis due to the ambiguity of symptomatology and their rare occurrence.

**Discussion:** They should therefore be considered in differential diagnosis of bony, vascular lesions of the head and neck region.

**Conclusion:** Since ABCs can be rare, expansile, rapidly growing and destructive and to make the clinicians aware for accurate diagnosis and treatment, we present a case of a mandibular aneurysmal cyst and its management.

**Key Words:** Symptomatology, Expansile, Destructive, Diagnosis, Management, Aneurysmal

## INTRODUCTION

Aneurysmal bone cyst (ABC) was first described in 1942 by Henry L. Jaffe and Louis Lichtenstein. These benign lesions account for 1-2% of all bone tumors and have a predilection for long bones of the skeleton. 3% of aneurysmal bone cysts arise in the head and neck region, the mandible (37.1%) far more common than the maxilla (7.1%). Posterior mandible region was more common than anterior region.<sup>1</sup>

Some studies have shown no gender predilection, however some have shown female predominance.

It accounts for only 1-2% of all primary bone tumors. ABCs can be asymptomatic or present with vague local pain and swelling, often leading to a delay in diagnosis due to the ambiguity of symptomatology.

Pathogenesis of ABCs remain controversial and a number of theories have been proposed. Kransdorf and Sweet (1995) suggested that these cysts may result from a vascular disturbance in the form of sudden venous occlusion or the development of an arteriovenous shunt. Struthers and Shear (1984b)

suggested that the initiating change in the primary lesion appeared to be the microcyst. These microcysts formation is facilitated by localised areas of necrosis in the stroma brought about by stagnation and ischemia. They enlarge and coalesce with each other.<sup>2</sup>

## CASE

We present a case of a 21-year-old male patient who reported to our department of Oral and Maxillofacial Surgery with a complaint of numbness and heaviness in the left lower posterior region of the jaw since 2 weeks.

Patient gave history of root canal treatment done with lower left first molar six years ago. No relevant medical history was given by the patient.

On extraoral examination, mild swelling in relation to left posterior region of lower jaw was seen. Intra-oral examination revealed a swelling in relation to left lower second premolar, first, second and third molar. There was expansion

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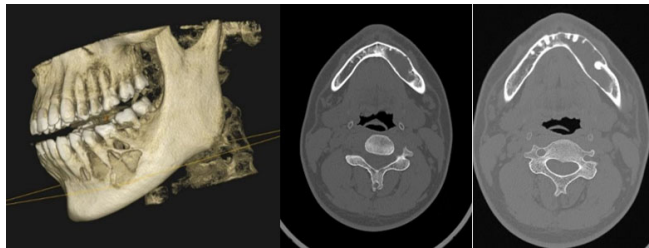
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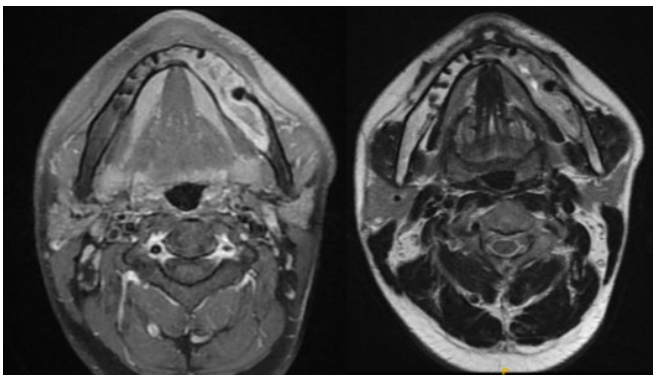
of buccal and lingual cortical bone. We went ahead with radiographic investigations before going for a biopsy.<sup>3</sup>



Fig: OPG showed widespread radiolucent lesion with scalloping borders on the left body of mandible extending from lower left canine to lower left third molar.



CT scan- suggestive of well circumscribed unilocular expansile lytic lesion approximately measuring 7.6x1.7x3.2 cm with thin septa seen in posterior aspect of symphysis, angle, body, ramus of left hemimandible. Focal cortical thinning involving inner aspect of ramus of mandible with widening of the mandibular foramen.

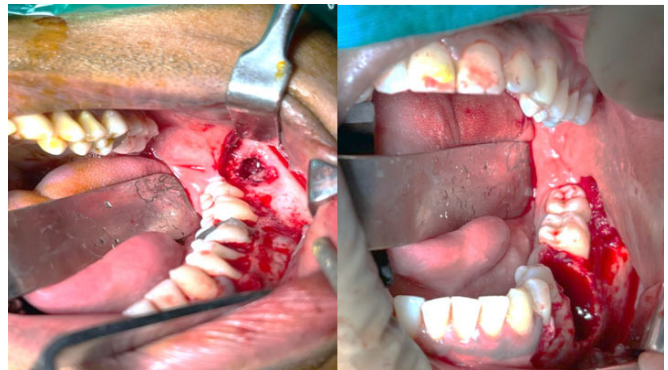


MRI scan- suggestive of ill-defined heterogeneously enhancing area of altered signal intensity measuring 7.8x1.8x3.6 cm noted in symphysis, angle, body, ramus of left hemimandible. Appearance suggestive of hypointense to isointense on T1W, isointense hyperintense on T2W and hyperintense on STIR image.

Radiological differential diagnosis given were- Odontogenic keratocyst, ameloblastoma, simple bone cyst, aneurysmal bone cyst.<sup>4</sup>

While performing biopsy, on aspiration, blood-tinged fluid was obtained and electrical pulp testing showed that the involved teeth were nonvital. Bone biopsy was performed and sent for histopathological examination which revealed multiple blood-filled spaces of varying sizes separated by loose fibrous tissue, multinucleate cells, scattered osteoid trabeculae.

On surgical intervention, we performed enucleation and curettage done with extraction of first molar tooth.



Post- operatively we saw good healing with new bone formation.



In view of tendency of certain cases to recur , we have kept the patient on periodic post operative followup visits.

## DISCUSSION

Diagnosing aneurysmal bone cysts is a challenge. They are only 1-2% of all primary bony tumors. Hnenny et al. reported that ABCs located in the skull base present with symptoms of neurological deficits, like, anosmia or gait ataxia. In the head and neck region mandible(37.1%) is more frequently involved than maxilla(7.1%).

CT and MRI are both crucial to diagnose & manage ABCs. On CT, they demonstrate expansile, lucent bone destruction with osseous remodelling and cortical thinning.

On MRI, fluid levels within the lesion can be appreciated better than on CT. MRI reveals a soap-bubble pattern. Under the microscope, ABCs are highly vascularized demonstrating delicate blood filled capillaries and distended venous channels. In between vascular spaces, islands of bone, fibrous tissue, multinucleated giant cells are visualized.

Regardless of location in the body, surgical intervention is the mainstay of treatment of ABCs. Curettage continues to be the gold standard for head and neck ABCs whereas en-bloc resection for other areas.

Non-surgical techniques include injection agents, embolization, radiation therapy and chemotherapy, less common. These can target tumors which are unresectable due to their location and are less invasive.

Surgical intervention being curative have favorable prognosis.

## CONCLUSION

Aneurysmal bone cysts of the head neck pose a diagnostic challenge to clinicians due to their rarity and non specific symptoms. CT and MRI are promising tools to aid diagnosis and formulate treatment plan. However, definitive or final diagnosis is done under microscopy via tissue biopsy. Surgical excision is by far the best treatment options however

other treatment options are available. Also, close follow-up is essential to prevent recurrent and relapse.

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