



A Rare Case Report: Simple Bone Cyst

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ABSTRACT

Solitary bone cyst, which is also called a traumatic bone cyst or idiopathic bone cyst, this bony cavity has no epithelial lining and infection, that carry fluid and small amounts of tissue. These lesions are detected fortuitously on general radiographic examination and do not show any symptoms clinically. The goal of this case report is to promote this special illustration of a 14-year-old male patient who on radiographical examination revealed bony lesion in right side of body of the mandible. Exploratory surgery and biopsy were done and interpretation shows a simple bone cyst.

KEYWORDS: Bony Cavity, Surgery and biopsy, Radiographic and Infection

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INTRODUCTION

The expression Solitary Bone Cyst was proposed by WHO in 1992, reported by Lucas in 1929 and Blum in 1932. The other names include solitary bone cyst, traumatic bone cyst, hemorrhagic bone cyst, extravasations cyst, idiopathic bone cavity and progressive bone cyst or cavity [1-7]. It is an unusual pathology that accounts for total 1% of cysts and tumors in the oral and maxillofacial region; according to their definition, are not a cyst as an epithelial lining is not involved. During the time of surgical reflection of flap most of the time it is found to be an empty cavity, but it might contain serous and/or hematic content [8]. Most of the time, SOLITARY BONE CYST is normally endows fortuitously during regular radiographic examination, instead of showing clinical characteristics and symptoms, and may cause light pain and tooth displacement at that site [9]. It has been mentioned in the literature that even though the pathological fracture is rare and without affecting the vitality of any adjacent teeth [10].

PRESENTATION OF CASE

A 14 years old male was reported to the department of Oral medicine and radiology with the chief complaint of decayed teeth in right upper back tooth region and swelling in lower third of the face on the right side from past 6 months.

CLINICAL EXAMINATION

Patient gave no history of trauma along with no relevant medical and family history was reported. The swelling was small initially and was slightly increased without pain. (Fig 1) On Extra-oral examination, it was revealed that swelling is not tender, which was diffused, present on right side in the lower third of the face near the angle of mandible.

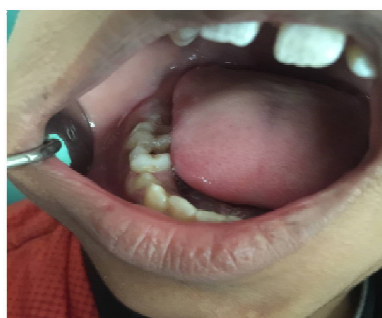


Figure 1. Extra-oral examination

On Intraoral examination, there was a swelling present in buccal region that extends distally from 44 & horizontally to distal aspect of 47 in the vestibule. Patient was unaware about the swelling. The swelling which was present was about 1x1 cm in size, non tender, bony hard in consistency and oval in shape involving normal overlying mucosa. The teeth 85 were decayed and 46 and 47 were vital (Fig. 1).

CLINICAL DIAGNOSIS

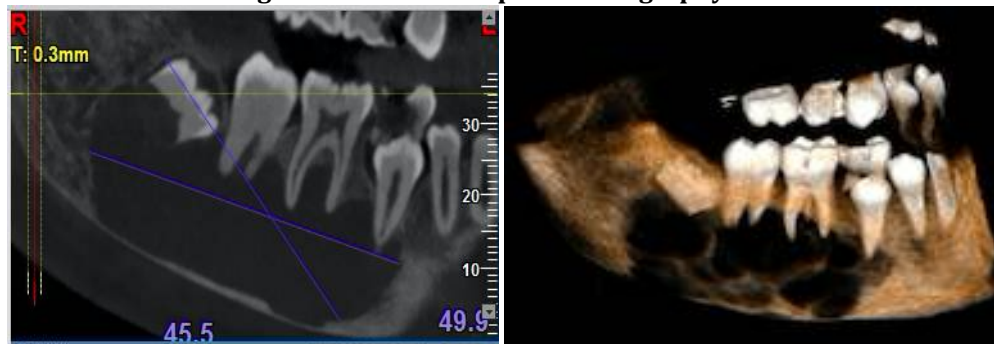
A provisional diagnosis of Dent alveolar abscess in respect to 45 was given after correlating with history and clinical examination. An OPG elicited a multilocular radiolucent lesion along with well-defined bone located in the right border of the mandible involving deciduous retained second molar, impacted second premolar, permanent first and second molar with non-crusted edges. There was absence of blunting of roots and tooth displacement in respect to 46 and 47 present (Fig. 2).

Fig 2. X-ray photography



The cone-beam computed tomography (CBCT) scans elicited Large non corticated expansile radiolucency in mandibular right posterior region that extended medially from root of #85 distally to the distal aspect of #48 of size 45.5mmx 49.5mm in its maximum transverse dimension. There was thinning of buccal and lingual cortices ,resorption and blunting of root of #46,#47.(Fig. 3).

Fig 3. cone-beam computed tomography

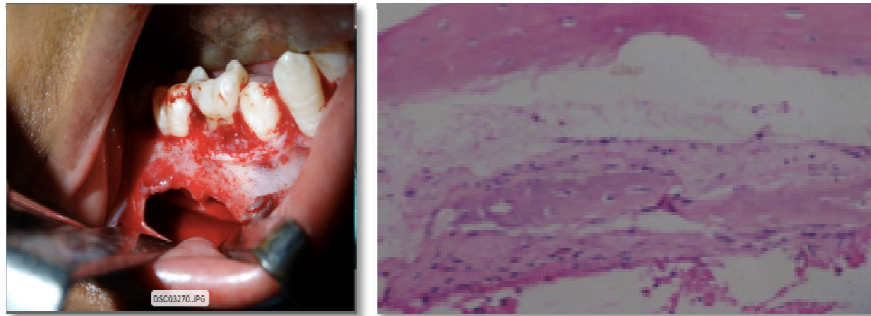


DIFFERENTIAL DIAGNOSIS

Based on clinical and radiological features, differential diagnosis of Infected Dentigerous cyst, Keratocystico dontogenic tumor, Mural Ameloblastoma, Central giant cell granuloma and Aneurysmal bone cyst was given.

PATHOLOGICAL DISCUSSION

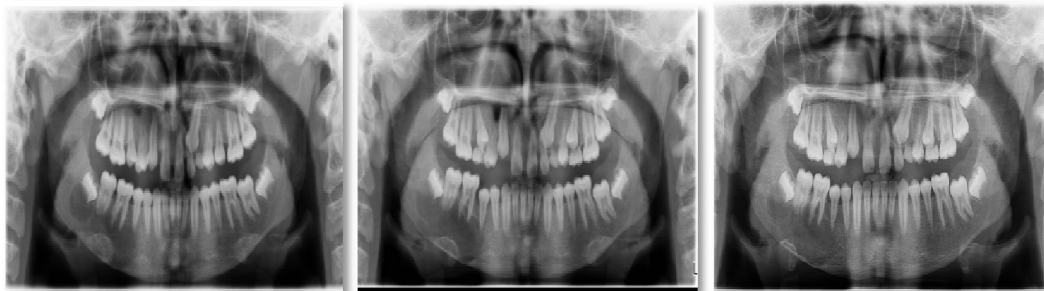
On surgical intervention, the sore was endowed to be vacant bone cavity with no epithelial lining and it contained minimal quantity of fluid with blood. Curettage of the vacant bone aperture was done (Fig 4).

Figure 4. Histopathological Examination

The bone fragments which were taken out with small quantity of fluid and soft tissue were sent for histopathological examination (Fig 4b) Sections showed thin strands of fibrous connective tissue mixed with trabeculae of cellular and reactive bone along with few capillaries. Stroma showed various areas of occasional giant cells, erythrocytes and fibrin adjacent to the bone surface. Epithelial lining was absent.

FINAL DIAGNOSIS

Based on clinical, histopathological and radiologic examination a final diagnosis of Simple Bone cyst was done. Follow up was done at 1, 3 and 6 months respectively that suggested secondary healing of bone (Fig 5).

**Fig 5. Radiologic examination at different period**

The world health organization classifies solitary bone cyst as a non neoplastic lesion that is related to bone. SBC is described as “intraosseous cyst with a tenous lining of connective tissue without epithelium”. Despite numerous theories mentioned in the literature –irrespective of the skeletal origin of the SBC— its etiology is unclear. Harnet *et al* [11] had reviewed 3 prevailing theories: 1) when no normal growth is seen in the bone of jaw 2) tumor degeneration process and 3) a factors that can trigger a trauma that bleeds. The later hypothesis has by far obtained most popularity, which is currently based on the process of formation of an intramedullary hemorrhage, and accompanied by a hematoma that form post trauma. The constraint inside hematoma causes venous stasis followed by necrosis of medulla and osteoclast resorb due to decreased tissularpH¹¹. This same hypothesis can be applied to the bone of the jaws which can be affected by number of microtraumas undergone by alveolar processes and the teeth. Many authors have questioned this process since there is no history of trauma in over 50% of the cases reported. Solitary bone cyst in the jaws might strike the patients who are in the age group of 2 to 75, but 56% to 70 % of the patients were present in their 20sand only 15% of the cases belong to more the 4th decade [12]. On radiographic examination, about 61% to 79% of solitary bone cysts appeared to be radiolucent. However, 21% of radiographs showed radiopaque foci, and about 7% might show cloudiness. The border and margins varies from well-defined to a full absence of cortical outline. Common feature consist of 44% to 68% of the cases which includes scalloping or interdigitation between the roots of teeth [13]. The definite diagnosis of simple bone cyst is invariably attained at the time of surgery when an Empty bone cavity with absence epithelial lining is observed is the definite diagnosis of simple bone cyst. Leaving some amount except normal bone and occasional fibrous tissue curetted from the bony cavity wall for the histopathological examination. The cavity might contain a straw-colored fluid of bright blood [14].

CONCLUSION

SBC is a rare pathology of jaw bone whose etiology and pathogenesis is not clear. One of the contributing

factors in the etiology of SBC is trauma. It has low rate of recurrence and a good prognosis. Complete, clear and detailed history and examination is required to reach the final diagnosis. A regular postoperative follow-up is recommended on yearly basis for minimum of 3 years, in correlation with the corresponding radiographic diagnosis in order to properly maintain healing or prevent recurrence.

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