*IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*
*e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 20, Issue 9 Ser.4 (September. 2021), PP 32-34*
*www.iosrjournals.org*

# Mandibular Solitary Bone Cyst: A Rare Entity

Dr. Dalvi Nikhat Akbar
*MDS Oral and Maxillofacial Surgery*
*Mumbai, Maharashtra, India*

***Abstract:-***
*A solitary bone cyst is a non-neoplastic osseous lesion comprising 1% of all the cysts affecting the jaws. The lesion is mainly diagnosed in young patients most frequently during the second decade of life. The majority of them are located in the mandibular body between the canine and the third molar. Clinically, the lesion is asymptomatic and is often accidentally discovered on routine radiological examination. The definite diagnosis of traumatic cyst can only be determined at surgery. Often, the material for histological examination may be scanty or non-existent. This article presents a well-documented case of a solitary bone cyst involving the body of mandible in a 14-year-old patient with no history of previous trauma. Simple curettage of the bone cavity resulted in the resolution of the lesion with progressive osseous regeneration. No evidence of recurrence was noted 6 months after the treatment.*

***Key Words:-*** *Solitary bone cyst, Non-epithelial, Traumatic bone cyst, Hemorrhagic bone cyst, Idiopathic bone cyst, Osteodystrophic cyst, Mandible*

---

Date of Submission: 25-08-2021 Date of Acceptance: 09-09-2021

---

## I. Introduction:-

Solitary bone cyst (SBC) of the jaws is uncommon, representing approximately 1% of all jaw cysts. The pathogenesis and etiology of these lesions remain unknown. But it is widely accepted that it could be the result of a vascular dysfunction leading to a local posthemorrhagic ischemia, inducing an osseous aseptic necrosis. The many different synonyms for SBC (eg, traumatic bone cyst, hemorrhagic bone cyst, idiopathic bone cyst, osteodystrophic cyst) reflect different etiopathogenic processes that remain difficult to elucidate, contributing to the confusion and lack of understanding when such terms such as "idiopathic cyst" and "essential cyst" are used. Classified as a jaw pseudocyst, SBC is an osteolytic lesion forming a cavity with either a geodic or polymorphous shape. It may be empty or filled with blood, serum, or a serohematic liquid.

It is devoid of an epithelial lining. SBC, also found in other skeletal locations, is often suspected after epidemiologic and radiologic test results and confirmed at surgery. Histology usually shows fibrous connective tissue or only bone.

## II. Case Report:-

A 14-year-old female patient was referred to our department by an orthodontist because of an asymptomatic radiolucent area seen on routine radiograph.

On clinical examination, there was no evidence of a swelling or cortical bone expansion. The teeth adjacent to pathologic area tested positive for vitality. There was no tooth mobility and the overlying mucosa appeared normal. There was no palpable regional lymph node enlargement. The patient's medical history was unremarkable. The patient reported no local trauma. Blood work-up (serum calcium, phosphorous, alkaline phosphatase, and PTH) were within normal limits.

Radiographic findings consisted of unilocular, well-circumscribed radiolucent area with a sclerotic halo that did not cause resorption of tooth roots, and that were located in the right body of the mandible (measuring about 2 cm).

FNAC was performed for the patient and aspirate obtained was blood clots with focal chronic inflammation. The proposed treatment was root canal treatment followed by enucleation and curettage of the lesion under procedural sedation. Intraoperative examination of the cystic cavity revealed empty spaces with no lining. A provisional clinical diagnosis of solitary bone cyst was made and the lesion was thoroughly curetted to induce fresh bleeding. The curetted material was then submitted for histopathological examination. The wound was closed primarily with absorbable sutures.

The diagnosis of solitary bone cyst was based on clinical, radiographic, surgical and histological features.

The patient was followed-up for a period of 6months. Radiograph six months later revealed that the radiolucent area had regressed and that new bone had formed in the site; the cyst did not recur.


**PREOPERATIVE RADIOGRAPH**

**POSTOPERATIVE RADIOGRAPH**

## III. Histopathological Examinaion:-

Histological examination of hematoxylin and eosin stained slides demonstrated fragments of fibrovascular connective tissue, scant bone fragments and numerous extravasated red blood cells. The specimen was notable for the lack of epithelium.

## IV. Discussion:-

A solitary bone cyst is a benign cavity in bone that is either empty or contains fluid. Despite its name, epithelium is not found. It is known by numerous other names, many of which also erroneously implying the presence of epithelium, and some of which try to explain possible etiologies. These names include: traumatic bone cyst, traumatic bone cavity, simple bone cyst, idiopathic bone cyst, and hemorrhagic bone cyst among others. The etiology is unknown, with proposed causes ranging from trauma to developmental.

Over 90% of solitary bone cysts are located in long bones, most commonly the proximal humerus and femur. Of the less than 10% that are found in the gnathic bones, the mandible is favored over three quarters of the time. In either the maxilla or mandible, the posterior, premolar-molar area, is the most common location. Rare multifocal lesions are occasionally encountered in the literature. Reports vary; however, males appear to be affected slightly more frequently than females. The mean age of those affected is 20 years. Solitary bone cysts are generally asymptomatic and are usually detected on routine dental radiographs.

Radiographically, solitary bone cysts are variably sized radiolucent lesions with smooth well-defined to poorly defined borders. The lesion is classically said to scallop, or push up, around associated roots. Root

resorption is uncommon and associated teeth should test vital. Larger lesions may have a vague multilocular appearance and even occasionally cause bone expansion.

Histologically, SBC is remarkable for its lack of tissue. Generally, the submitted tissue consists of scant fragments of fibrovascular connective tissue, extravasated red blood cells and pieces of reactive vital bone. No cystic epithelium is identified. Often times the scarcity of tissue makes rendering a diagnosis difficult, however, the intraoperative finding of an empty or fluid filled space is supportive of a solitary bone cyst.

Treatment of solitary bone cysts of the gnathic bones is surgical. Curettage of the bony walls, and often the biopsy procedure itself, will incite healing. Resolution generally takes about 6 months; larger lesions may take longer. Follow up is indicated, however, the prognosis is excellent.

## V. Conclusion:-

- Solitary bone cyst is a rare entity with typical clinical and radiographic features.
- Positive diagnosis is evoked intra-operatively in the absence of cystic wall and the discovery of an empty cavity or filled with a serohematic fluid.
- Surgical exposure and curettage are the treatment of choice and provide a satisfying outcome.

## References:-

[1]. Vidya Ajila et al. Unusual presentation of Solitary bone cyst – A case report. Nitte University Journal of Health Science. Vol. 4, No. 1 , March 2014.
[2]. Brenda L. Nelson et al. Solitary Bone Cyst. Head and Neck Pathol (2010 ) $ : 208-209.
[3]. Arati S Neeli et al. Solitary bone cysts of the mandible : Two case reports and a review of literature. World Journal of Dentistry , July – September 2013 ; 4 (3) : 193-197.
[4]. Zaid H. Baqain et al. Recurrence of a solitary bone cyst of the mandible : case report. British Journal of Oral and Maxillofacial Surgery (2005) 43 , 333-335.
[5]. Joseph L. Bernier and Surinder N. Bhaskar. Aneurysmal bone cysts of the mandible . Volume 11 , Number 9.
[6]. Joao Frank Carvalho Dantas de Oliveira et al. Mandibular simple bone cysts : a rare case of bilateral occurrence . Braz J Otorhinolaryngol. 2012 ; 78 (2) : 134
[7]. Jean – Claude Harnet et al. Solitary bone cysts of the jaws : A Review of the etiopathogenic hypotheses. J Oral Maxillofac Surg 66 : 2345 – 2348, 2008.
[8]. N Dhinkesh Kumar et al. Solitary bone cyst. Indian Journal of Dental Research , 22 (1) , 2011
[9]. Ignacio Velasco et al. The unusual evolution of a simple bone cyst in the mandible : A case report. J Clin Exp Dent . 2012 ; 4 (2) : e 132-5
[10]. Salini G Sudha et al. Simple bone cyst presenting as an incidental finding in pretreatment orthodontic radiograph : A case report. Journal of Indian Academy of Oral Medicine & Radiology 2017 ; 29 : 53-5
[11]. Elavenil Panneerselvam et al. Solitary bone cysts – A rare occurrence with bilateraly symmetrical presentation . Journal of Oral and Maxillofacial Pathology ., Vol 18 , Issue 3 , Sep- Dec 2014.
[12]. Gunashekhar Madiraju et al. Solitary bone cyst of the mandible : a case report and brief review of literature. BMJ Case Rep 2014
[13]. Kuhmichel A and Bouloux . Multifocal traumatic bone cysts : case report and current thoughts on etiology. J Oral Maxillofac Surg . 2010 ; 68 (1) : 208-12.
[14]. Harnet JC et al. Solitary bone cysts of the jaws : a review of the etiopathogenic hypotheses. J Oral Maxillofac Surg 2008 ; 66 (11) : 2345-8.
[15]. Suei Y et al. Radiographic findings and prognosis of simple bone cysts of the jaws. Dentomaxillofac Radiol. 2010 ; 39 (2) : 65-72