ORIGINAL RESEARCH PAPER
Volume - 14 | Issue - 08 | August - 2025 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

RARE REVELATION: A UNIQUE TRAUMATIC BONE CYST JOURNEY"- A CASE REPORT

Dental Science

Dr.K S Manjunath Professor and HOD, Department of Oral and Maxillofacial Surgery, Sri Hasanamba Dental College and Hospital, Hassan, Karnataka

Dr.Shashidhara Kamath Professor, Department of Oral and Maxillofacial Surgery, Sri Hasanamba Dental College and Hospital, Hassan, Karnataka

Dr.Remya Madhusuthan Senior lecturer,Department of Oral and Maxillofacial Surgery, Sri Hasanamba Dental College and Hospital, Hassan, Karnataka

Dr.Sushma S* Post Graduate, Department of Oral and Maxillofacial Surgery, Sri Hasanamba Dental College and Hospital, Hassan, Karnataka*Corresponding Author

ABSTRACT

Traumatic bone cysts (TBCs) are relatively rare cavities of the jaws accounting approximating 1% of cysts of jaw which is common in long bone, particularly, the metaphyseal region than in maxillofacial region that are bordered with nonepithelial tissue. Most often, the lesion is discovered in second decade of their life. Between the canine and the third molar in the mandibular body are the majority of TBCs. Majority of the time, the lesion is clinically asymptomatic and is usually unintentionally found during regular radiological examinations as a "scalloping effect" or unilocular radiolucent region. We report a well-documented, histopathological and radiographically unusual instance of TBC affecting the right mandibular ramus that may also have an iatrogenic etiology.

KEYWORDS

Traumatic bone cyst, scalloping effect, non-epithelial.

INTRODUCTION:

Traumatic bone cyst was first described by Lucas and Blum in 1929 as separate disease entities; it is an uncommon lesion that may be incidentally diagnosed on routine dental treatment (1). The cause of the lesion is still unknown, and it goes by several names, including unicameral cyst, traumatic haemorrhagic cyst, extravasation cyst, solitary bone disease, progressive bone cyst, and haemorrhagic extravasation cyst. Traumatic bone cysts are generally detected in patients in the second and third decade of life, though in 15% it was found above 40 years of age (2). As in most cases the lesion remains asymptomatic and it is mostly discovered during routine radiographic examination. (3)

An image that is radiolucent and has distinct uneven or scalloped edges is indicative of a radiographically traumatic bone cyst. It is uncommon to see cortical plate enlargement when the lesion is contained within the medullary bone with rare teeth resorption

CASE REPORT:

A 15-year-old female was reported to Sri Hasanamba dental college and hospital,dept of Oral and Maxillofacial Surgery Unit, for evaluation of an asymptomatic unilocular radiolucency of posterior right mandible which was discovered as part of routine radiographic screening for treatment. Patient gives history of trauma in symphysis region and got operated in our institution via open reduction with internal fixation under general anesthesia,4 year back which was uneventful. Patient revealed no contributory medical history, but reported a minor trauma to the chin 1 years back. He was asymptomatic since then, but gives history of pain in his lower right back tooth region which is vague pain, non-radiating, aggrevates on having food, relieved symptomically (analgesics),no history of pus discharge and no other symptom and swelling noted.

The teeth were found to be vital upon local examination, and both thermal and electrical pulp tests revealed normal responses. Caries, tooth fractures, and periodontitis were all ruled out. The mucosa on top was normal, and there were no signs of sinus enlargement or drainage (fig2). The article reports an uncommon case of traumatic bone cyst of posterior mandible which was surgically managed in our unit.

Orthopantogram reveals (fig1) presence of unilocular radiolucent lesion extending from right mandibular second premolar to second molar. Superoinferiorly, it extends from the root apices of the tooth to 1.5 mm above the inferior border the mandible. Anteroposteriorly, distal root of 44 to mesial root of 47. Based on clinical and radiological analysis provisional diagnosis was traumatic bone cyst of right mandibular posterior. Bone biopsy was carried by giving crevicular incision irt 44 to 46 with vertical releasing incision, using surgical round bur adequate bone shaving was done gently to reach the specimen (fig3).Intitial aspiration gave empty in syringe with trial on different angulation,serous blood was collected. The wound is irrigated with betadine-saline done and sent for histopathological evaluation, which revealed haemorrhagic connective tissue with hemosiderin-laden macrophages noted(fig 5).

After 15 days of bone biopsy, again surgical exploration followed by curettage of the bony walls. Irrigation with betadine-saline done, PRF placed (fig7) followed by surgical extraction of mesioangular impacted 48 and sutured using 3.0 mersilk. Haemostasis achieved and closure using 3.0 Vicryl (fig8). Postoperative healing was satisifactory and follow-up panoramic radiograph done 11 months after surgery indicates the restoration of bone structure and resolution of the lesion in the previous region (fig 9).

FIGURES:

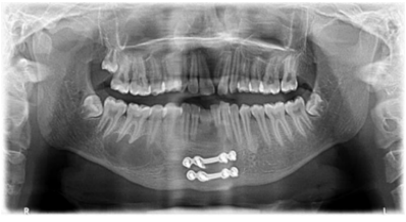

Fig 1

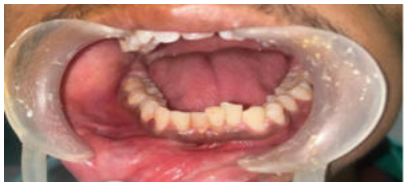

Fig 2

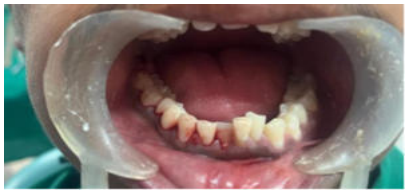

Fig 3

Fig 4

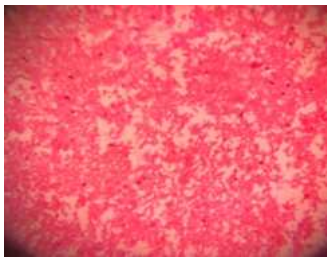

Fig 5

Fig 6

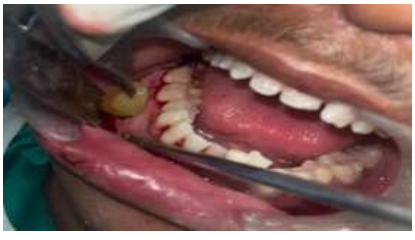

Fig 7

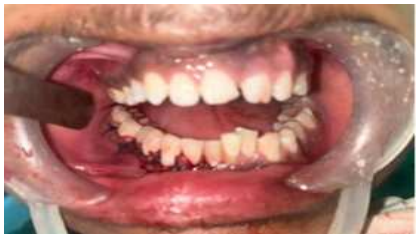

Fig 8

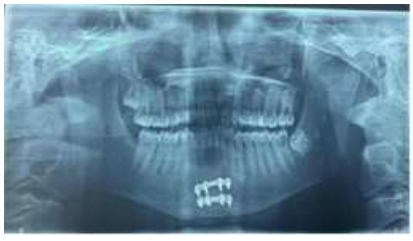

Fig 9

DISCUSSION:

The TBC is an uncommon, nonepithelial lined, intraosseous bone cavity of the jaws. They have been reported in the literature under a variety of names: SBC, haemorrhagic bone cyst, extravasation cyst, and simple bone cyst.[5] The protein composition in the cystic liquid is similar to that in serum. It contains slightly more bilirubin.[7]

Suei *et al.* reported that TBC of the jaws have an equal prevalence in both genders, with most lesions occurring among patients in the second decade of life. However, the lesion is also been found in older age brackets.[6] The mandibular body is the frequent site of TBC; however, cases involving the mandibular symphysis, ramus, condyle, and even anterior maxilla have been reported.[4]

The majority of TBC range from a lesion of 1 cm in diameter to those which involve the entire body and ramus of the mandible. In contrast to other cysts of the jaw, the hydrostatic pressure of TBC is relatively low, while the osmotic pressure in relation to blood is slightly higher.[5] The protein composition in the cystic liquid is similar to that in serum. It contains slightly more bilirubin.[7] The growth of some TBC can cause pathological fracture of the mandible. On the other hand, some TBC can have spontaneous regression.

Trauma results in the formation of intraosseous hematoma. Subsequently, the blood clot liquefies, and surrounding bone is destroyed by enzymatic activity. Blum and Thoma suggested that a previous history of trauma to the jaws contributes to the formation of most of TBCs [4]

Traumatic bone cysts are mostly detected accidentally as they are usually asymptomatic.[4]

Cases were reported in literature where the lesion was asymptomatic and was detected during routine radiological examination. In most cases, intraorally, the soft tissues were found to be unaffected. Moreover, there was no increased mobility of the teeth or change in their colour. In our review, we found only three cases where nonvital teeth were associated with the lesion.

The presence of symptoms is quiet variable. While some patients may be asymptomatic, others may develop symptoms such as altered sensations, numbness, swelling, and pain.[11] There may also be cortical plate expansion.[6] In the present case report, the patient had throbbing pain due to irreversible pulpitis but no paraesthesia.

The structure of the inferior alveolar canal may in some cases be preserved but not always. There are chances of contact with remaining roots and impacted wisdom teeth. There is no resorption of the teeth roots.[11] The following differential diagnoses can be considered[8].

The treatment is surgical. The procedure comprises the evacuation of the cystic contents followed by curettage of the cavity to stimulate bleeding in the cavity.[7] The wound is then sutured. This is followed by the formation/creation and organization of a clot and healing by the formation of new bone.[9] Cases have been reported where TBC heal spontaneously without any intervention.[11] This is probably the reason why they are rarely found in older age groups and mostly restricted to younger age groups.[8] Recurrences are rare after surgical treatment. A histopathological diagnosis will confirm the existence of a TBC using some of the tissues obtained from the bone cavity.[11] Histological examination of slides shows fragments of fibrovascular connective tissue.

The specimen was noted for the absence of epithelium prompting the diagnosis of a traumatic bone cyst. However, if no tissue is found in the cavity for histopathological examination, a decision on diagnosis of a TBC will be according to the clinical experience of the operating surgeons[11].

CONCLUSION

In case of TBC it is difficult to reach a conclusive diagnosis because traumatic bone cysts are referred to by a number of labels. Trauma may be a key factor in the development of TBCs however its etiopathogenesis is not yet convincingly sufficient.

ACKNOWLEDGMENTS

I extend my sincere gratitude to the HOD, professors, lectures and college whose support and collaboration have been fundamental to the completion of this case report endeavour.

REFERENCES:

1. Lucas CD, Blum T. Do all cysts of the jaws originate from the dental system. J Am Dent Assoc 1929;16(4):647-61.
2. Freedman GL, Beigleman MB. The traumatic bone cyst: a new dimension. Oral Surg Oral Med Oral Pathol. 1985;59:616–618. doi: 10.1016/0030-4220(85)90191-4.
3. Surej Kumar, L.K., Kurien, N. & Thaha, K.A. Traumatic Bone Cyst of Mandible. J.Maxillofac. Oral Surg. 14, 466–469 (2015). https://doi.org/10.1007/s12663-010-0114-8
4. Blum T. An additional report on traumatic bone cysts; also a discussion of Dr. John G. Whinery's paper, "Progressive bone cavities of the mandible" Oral Surg Oral Med Oral Pathol. 1955;8:917–39
5. Sebastijan Sandev. Traumatic bone cysts Acta Stomatol Croat. 2001;35:417–20
6. Madiraju G, Yallamraju S, Rajendran V, SrinivasaRao K. Solitary bone cyst of the mandible: A case report and brief review of literature BMJ Case Rep 2014. 2014 pii: bcr2013200945
7. Kaugars GE, Cale AE. Traumatic bone cyst Oral Surg Oral Med Oral Pathol.

1987;63:318–24
8. Xanthinaki AA, Choupis KI, Tosios K, Pagkalos VA, Papanikolaou SI. Traumatic bone cyst of the mandible of possible iatrogenic origin: A case report and brief review of the literature Head Face Med. 2006;2:40
9. Beasley JD 3rd. Traumatic cyst of the jaws: Report of 30 cases J Am Dent Assoc. 1976;92:145–52
10. Hansen LS, Sapone J, Sproat RC. Traumatic bone cysts of jaws Oral Surg Oral Med Oral Pathol. 1974;37:899–910
11. Bindra, Sukhvinder; Jadaun, Gargi; Jois, Harshvardhan S.; Sen, Prabuddhtraumatic bone cyst of mandiblea case report of rare entity and review of literature 2019 10.4103/ccd.ccd_489_18
12. Grasso AM, Demkee D, Finnegan J. Traumatic cyst of the mandible: Report of case J Oral Surg. 1969;27:341–4
13. Shear M. Cysts of the Oral Regions 19923rd ed Oxford Wright PSG
14. Harnet JC, Lombardi T, Klewansky P, Rieger J, Tempe MH, Clavert JM, et al Solitary bone cyst of the jaws: A review of the etiopathogenic hypotheses J Oral Maxillofac Surg. 2008;66:2345–8
15. Strabbing EM, Gortzak RA, Vinke JG, Saridin CP, van Merkesteyn JP. An atypical presentation of a solitary bone cyst of the mandibular ramus: A case report J Craniomaxillofac Surg. 2011;39:145–7
16. Kuhmichel A, Bouloux GF. Multifocal traumatic bone cysts: Case report and current thoughts on etiology J Oral Maxillofac Surg. 2010;68:208–12
17. Kuhmichel A, Bouloux GF. Multifocal traumatic bone cysts: Case report and current thoughts on etiology J Oral Maxillofac Surg. 2010;68:208–12
18. Feinberg SE, Finkelstein MW, Page HL, Dembo JB. Recurrent "traumatic" bone cysts of the mandible. Oral Surg Oral Med Oral Pathol 1984;57:418-22.
19. Martins-Filho PR, Santos Tde S, Araújo VL, Santos JS, Andrade ES, Silva LC, et al. Traumatic bone cyst of the mandi ble: A review of 26 cases. Braz J Otorhinolaryngol 2012;78:16-21.
20. Pindborg JJ. Histological Typing of Odontogenic Tumours, Jaw Cysts, and Allied Lesions. International Histological Classification of Tumours. Vol. 5. Geneva: World Health Organization; 1971.