

Hemorrhagic bone cyst of mandible: A case report

G. Siva Prasad Reddy, G. V. Reddy, Phanitej G., Amarnath Reddy, Srilatha Priyadarshini, K. Sravan Kumar Reddy, K. Shravan Kumar

ABSTRACT

Introduction: Hemorrhagic bone cyst is a non-epithelial cyst and an uncommon lesion of the jaw bones which is usually diagnosed in the early decades of life. It is usually diagnosed accidentally during routine dental examination because of its asymptomatic nature. On radiographic examination it looks like a well-defined radiolucent lesion located more commonly in the posterior mandible. **Case Report:** We report an unusual case of hemorrhagic cyst which was diagnosed when the patient came for a regular dental visit to get fillings done for a carious tooth. **Conclusion:** Diagnosing hemorrhagic bone cyst is a challenge, as it is asymptomatic most of the times and may be mistaken for tumors of the jaws when noticed radiographically. Thorough surgical enucleation stands as best treatment option.

Keywords: Curettage, Enucleation, Hemorrhagic bone cyst, Solitary bone cyst

How to cite this article

Reddy GSP, Reddy GV, Phanitej G, Reddy A, Priyadarshini S, Reddy KSK, Kumar KS. Hemorrhagic bone cyst of mandible: A case report. Int J Case Rep Images 2016;7(10):662–665.

Article ID: Z01201610CR10705GR

doi:10.5348/ijcri-2016117-CR-10705

G. Siva Prasad Reddy¹, G. V. Reddy², Phanitej G.³, Amarnath Reddy³, Srilatha Priyadarshini³, K. Sravan Kumar Reddy³, K. Shravan Kumar³

Affiliations: ¹MDS, Professor, Oral and maxillofacial surgery, Panineeya Mahavidyalaya Institute of Dental Sciences and Research Centre, Hyderabad, Telangana, India; ²MDS, Professor & Head of the Department, Oral and Maxillofacial Surgery, Panineeya Mahavidyalaya Institute of Dental Sciences and Research Centre, Hyderabad, Telangana, India; ³BDS, Postgraduate Student, Oral and Maxillofacial Surgery, Panineeya Mahavidyalaya Institute of Dental Sciences and Research Centre, Hyderabad, Telangana, India.

Corresponding Author: Dr. K. Shravan Kumar, Department of Oral and Maxillofacial Surgery, Panineeya Mahavidyalaya Institute of Dental Sciences and Research Centre, Road No. 5, Kamala Nagar, Dilsukhnagar, Hyderabad - 500 060, Telangana, India; E-mail: shravankasireddy07@yahoo.co.in

Received: 12 April 2016
Accepted: 13 July 2016
Published: 01 October 2016

INTRODUCTION

Hemorrhagic bone cyst was first described in 1929 by Lucas and Blum [1]. The diagnostic criteria of this cyst were given in 1946 by Rushton [2]. The hemorrhagic bone cyst is defined as a single radiolucent lesion without an epithelial lining, surrounded by bony walls and either lacking contents or containing liquid and/or connective tissue. It has various names such as traumatic bone cyst, solitary bone cyst, unicameral bone cyst, simple bone cyst, progressive bone cavity, extravasation cyst, and idiopathic bone cavity because of its unestablished etiopathogenesis. Various causative factors have been proposed in the etiology of hemorrhagic bone cyst they include low-grade infection, venous obstruction, increased osteolysis, intramedullary bleeding, local alterations in bone growth, local ischemia, bone tumor degeneration, altered calcium metabolism, any form of trauma [3].

CASE REPORT

A 20-year-old male reported to the department of Oral and Maxillofacial Surgery with a unilocular, well-defined radiolucent lesion in the left body of the mandible extending from distal aspect of 36 (lower left first molar) to 38 (lower left third molar) region (Figure 1 and Figure 2). Patient was asymptomatic, on examination there was no gross asymmetry of face on left side, vestibule is non-tender and no expansion of bony cortices seen. On dental examination 37 (lower left second molar) was carious. Pulp vitality testing was performed in relation to 36, 37 and 38 which showed the teeth were vital and delayed response was noted in relation to 37. A fine needle aspiration was attempted but could not pierce through the bony cortices. Based on these findings we considered keratocystic odontogenic tumor as provisional diagnosis.

Enucleation with chemical cauterization was planned under general anesthesia. All hematological investigations were within the normal limits. A crevicular incision placed from 36 to 38 region and a distal relieving incision placed to elevate mucoperiosteal flap. Extraction of 37, 38 was done, removal of interdental and interradicular bone was carried out to expose the cystic cavity and surprisingly most of the cystic cavity appeared empty except bleeding from the cystic cavity a little soft tissue (Figure 3). The cystic cavity was curetted and irrigated thoroughly with normal saline. The bleeding was managed by packing the cavity with gelatin sponge. Surgical wound was closed and the soft tissue curetted was sent for histopathological examination.

The histopathological report revealed that the soft tissue specimen had connective tissue with no epithelial lining, few areas of hemorrhage and inflammatory cell infiltrate chiefly neutrophils, lymphocytes, plasma cells and macrophages (Figure 4). Correlating this with clinical and radiological features we came to a final diagnosis of “Hemorrhagic bone cyst of mandible”.

Patient recovered normally with no complications postoperatively. Patient was followed-up after three days, one week, fifteen days, one month and three months, and the wound healing at the surgical site was satisfactory with no dehiscence (Figure 5A–B). Postoperatively, five months orthopantomogram showed new bone formation (Figure 6).

DISCUSSION

Hemorrhagic bone cysts are rare accidental findings diagnosed on routine radiographic examination of jaws accounting for 1% of jaw cysts. Sex predilection is equal but some studies in literature suggest clear female predominance (14:7) [4]. These cysts occur in first two decades of life and the most common site of occurrence is posterior mandible (75%) [5].

There are various theories explaining the etiopathogenesis of hemorrhagic bone cyst out of which

commonly believed is traumatic theory. According to this theory hemorrhage due to trauma in the medullary spaces results in hematoma formation which causes

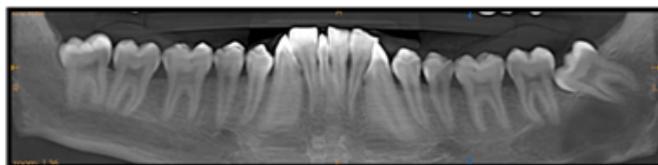


Figure 1: Cone beam computed tomography showing radiolucent lesion in 37 and 38 region.

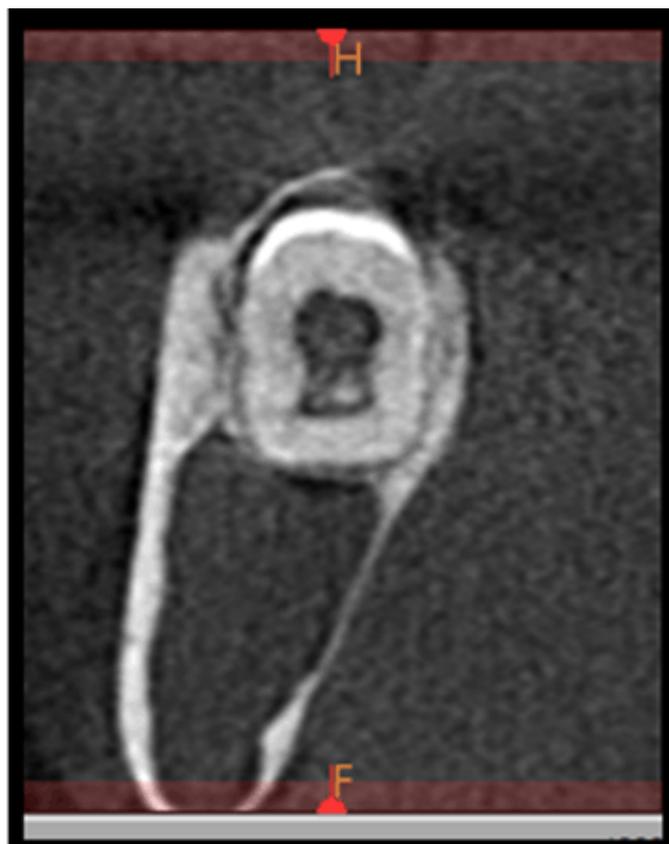


Figure 2: Coronal section in cone beam computed tomography demonstrating osteolytic lesion.



Figure 3: Cystic cavity filled with blood.

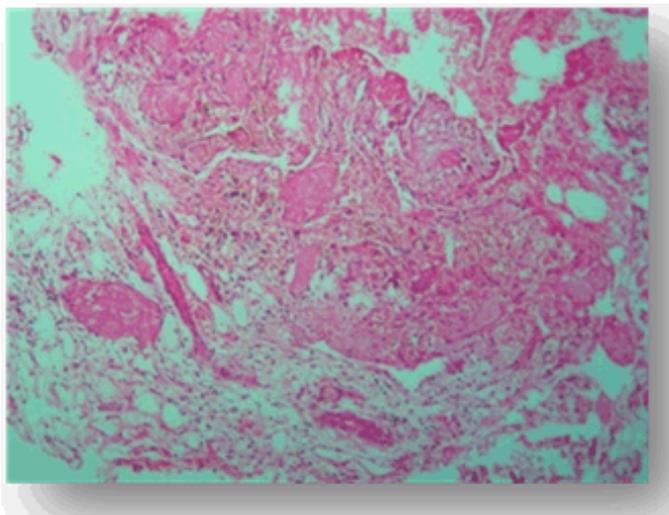


Figure 4: Connective tissue, few areas of hemorrhage and inflammatory cell infiltrate (H&E stain, x40).

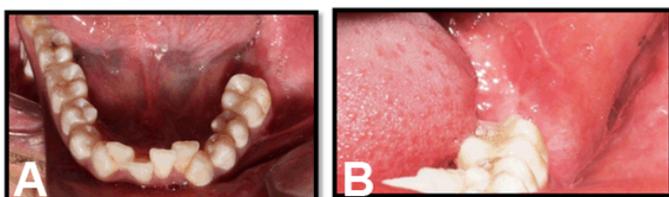


Figure 5 (A–B): Five months follow-up photographs showing good wound healing.



Figure 6: Five months follow-up orthopantomogram showing new bone formation.

venous stasis leading to necrosis and resorption of bone by osteoclastic activity [6].

The cysts are usually asymptomatic, however, dull pain is associated in 10–30% of the patients and less commonly associated findings are tooth sensitivity, paraesthesia, delayed eruption of permanent teeth. Cortical plate expansion is seen in some cases, which occurs commonly on buccal side. Our patient is completely asymptomatic with no cortical plate expansion. Adjacent teeth mobility, displacement and root resorption are not associated with hemorrhagic bone cyst [7].

Radiographically the appearance is solitary, well circumscribed usually unilocular or multilocular radiolucency. In a review study of 26 cases, 73.1% of

cases were unilocular and 26.9% were multilocular [8]. The cystic cavity may be empty containing air (69.2%) or filled with serous-bloody fluid (19.2%) and serous fluid in three cases (11.6%) [8]. As there will be no cystic lining these are considered as pseudo cysts. The known treatment of choice for hemorrhagic bone cyst is curettage of the cystic cavity. Curettage of cystic cavity induces fresh bleeding and new bone formation. Packing the cavity with gelatin sponge, Bone grafts along with platelet rich plasma were also expected to help in new bone formation [9]. In our case, enucleation and curettage of bone walls was performed cystic cavity is packed with gelatin sponge and no bone grafting was performed.

Recurrences are rare with hemorrhagic bone cyst, if present usually occur within three months after surgery. Our fifth month postoperative radiograph did not show any recurrence. If there are multiple cysts recurrence rates would be as high as 71% or if the cysts are associated with florid cemento-osseous dysplasia it would be 75% [9].

CONCLUSION

Diagnosing hemorrhagic bone cyst is a challenge, as it is asymptomatic most of the times and may be mistaken for tumors of the jaws when noticed radiographically. Even though it is non-neoplastic, if left untreated may lead to pathologic fracture of mandible. Thorough surgical enucleation stands as the best treatment option. It clears the cystic contents if present, and induces fresh bleeding which in turn encourages new bone formation within three to six months following surgery.

Author Contributions

G. Siva Prasad Reddy – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data; Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

G. V. Reddy – Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Phanitej G. – Conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Amarnath Reddy P. – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

B. Srilatha Priyadarshini – Substantial contributions to conception and design, Acquisition of data, Analysis

and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

K. Sravan Kumar Reddy – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

K. Shravan Kumar – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published.

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

Copyright

© 2016 G. Siva Prasad Reddy et al. This article is distributed under the terms of Creative Commons Attribution License which permits unrestricted use, distribution and reproduction in any medium provided the original author(s) and original publisher are properly credited. Please see the copyright policy on the journal website for more information.

REFERENCES

1. Lucas C, Blum T. Do all cysts of the jaws originate from the dental system. *J Am Dent Assoc* 1929;16:659–61.
2. Rushton M. Solitary bone cysts in the mandible. *Br Dent J* 1946 Jul;81(2):37–49.
3. Kumar ND, Sherubin JE, Raman U, Shettar S. et al. Solitary bone cyst. *Indian J Dent Res* 2011 Jan-Feb;22(1):172–4.
4. Cortell-Ballester I, Figueiredo R, Berini-Aytés L, Gay-Escoda C. Traumatic bone cyst: a retrospective study of 21 cases. *Med Oral Patol Oral Cir Bucal* 2009 May 1;14(5):E239–43.
5. Neel AS, Kotrashetti SM, Louis A. Solitary Bone Cysts of the Mandible: Two Case Reports and a Review of Literature. *World J Dent* 2013;4(3):193–7.
6. Yavuz Findik Y, Timucin Baykul T, Mert Bulte M. Huge solitary bone cyst located in posterior mandible. *Int J Experiment Dent Sci* 2014;3(1):53–6.
7. 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 Nov 12;2:40.
8. Martins-Filho PR, Santos Tde S, Araújo VL, Santos JS, Andrade ES, Silva LC. Traumatic bone cyst of the mandible: a review of 26 cases. [Article in English, Portuguese]. *Braz J Otorhinolaryngol* 2012 Apr;78(2):16–21.
9. Panneerselvam E, Panneerselvam K, Chanrashekar SS. Solitary bone cysts-A rare occurrence with bilaterally symmetrical presentation. *J Oral Maxillofac Pathol* 2014 Sep-Dec;18(3):481.

Access full text article on
other devices



Access PDF of article on
other devices

