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**ABSTRACT**

**Introduction**

Haemorrhagic 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. Because of its asymptomatic nature, it is usually diagnosed accidentally during routine dental examination. 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 haemorrhagic cyst which was diagnosed when the patient came for a regular dental visit to get fillings done for a carious tooth.

**Conclusion**

Diagnosing haemorrhagic bone cyst is a challenge, as it is asymptomatic most of the times and may be mistaken for tumours of the jaws when noticed radiographically. Thorough surgical enucleation stands as best treatment option.

**Keywords:** Haemorrhagic bone cyst, enucleation, solitary bone cyst, curettage
INTRODUCTION

Haemorrhagic 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 haemorrhagic 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. Because of its unestablished etiopathogenesis it has various names like traumatic bone cyst, solitary bone cyst, unicameral bone cyst, simple bone cyst, progressive bone cavity, extravasation cyst, and idiopathic bone cavity. Various causative factors have been proposed in the etiology of haemorrhagic bone cyst they include low-grade infection, venous obstruction, increased osteolysis, intramedullary bleeding, local alterations in bone growth, local ischemia, bone tumour degeneration, altered calcium metabolism, any form of trauma [3].

CASE REPORT

A 20 year old male patient 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 tumour as provisional diagnosis.

Enucleation with chemical cauterisation was planned under general anesthesia. All haematological investigations were within the normal limits. A Crevicular incision placed from 36 to 38 region and a distal relieving incision placed to elevate mucoperiostel 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 gelatine 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 haemorrhage 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
“Haemorrhagic bone cyst of mandible”.
Patient recovered normally with no complications postoperatively. Patient was
followed after 3 days, 1 week, 15 days, 1 month and 3 months and the wound healing
at the surgical site was satisfactory with no dehiscence (Fig 5 & 6). The five months
postoperative orthopantomogram showed new bone formation (Figure 7).

DISCUSSION
Haemorrhagic 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 haemorrhagic bone
cyst out of which commonly believed is traumatic theory. According to this theory
haemorrhage due to trauma in the medullary spaces results in haematoma formation
which causes 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% to 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 haemorrhagic 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 haemorrhagic bone cyst is curettage of the cystic cavity. Curettage of cystic cavity induces fresh bleeding and new bone formation. Packing the cavity with gelatine 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 gelatine sponge and no bone grafting was performed.

Recurrences are rare with haemorrhagic 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 haemorrhagic bone cyst is a challenge, as it is asymptomatic most of the times and may be mistaken for tumours of the jaws when noticed radiographically. Even though it is nonneoplastic, if left untreated may lead to pathologic fracture of mandible. Thorough surgical enucleation stands as best treatment option. It clears the cystic contents if present, and induces fresh bleeding which in turn encourages new bone formation within 3 to 6 months following surgery.

REFERENCES


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Group 2 - Drafting the article, Critical revision of the article
Group 3 - Final approval of the version to be published

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**FIGURE LEGENDS**

Figure 1: CBCT showing radiolucent lesion in 37 and 38 region.

Figure 2: Coronal section in CBCT demonstrating osteolytic lesion.

Figure 3: Cystic cavity filled with blood.

Figure 4: Histopathological section revealing connective tissue, few areas of haemorrhage and inflammatory cell infiltrate.

Figure 5 and 6: Five months follow-up photographs showing good wound healing.

Figure 7: Five months follow-up orthopantomogram showing new bone formation.

**FIGURES**

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