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Case Presentation on Central Giant Cellgranuloma

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Abstract: ***Central giant cell granuloma is a non-neoplastic lesion which exhibits a spectrum of clinical behaviour ranging from nonaggressive to aggressive variants. This paper presents a case of CGCG involving the mandibular region in a female patient with clinical, radiological, histopathological and surgical aspect of the lesion. The lesion commonly occurs in the mandible anterior to first molar region.***

Keywords: Giant Cell Granuloma, tumour, lesion, surgery

1. Introduction

Central giant cell granuloma was first described by Jaffe in 1953 to distinguish this lesion from the giant cell granuloma of long bones. It is an uncommon, benign and proliferative non neoplastic process.

It is a benign tumour of connective tissue origin.

The term central giant cell lesion has been proposed, as the microscopic features are not those of a true granulomatous process.

CGCG demonstrates variable clinical behaviour ranging from a slowly growing, painless swelling to rapidly expanding aggressive tumour, characterized by pain, local destruction of bone, root displacement or resorption.

2. Case Report

A 26 year old female came to the clinic with a complaint of a painless swelling on the lower right region of the mandible involving the canine, first premolar and second premolar (43,44,45).

History revealed that the swelling started as a small one and progressively increased over a period of six months. It was associated with intermittent pain.

There was no swelling in any other parts of the body. The patient was systemically healthy.
No history of fever or radiating pain.

On extraoral examination, a diffuse swelling was seen on the right side of the face in the mandibular region.

The surface of the swelling was smooth and extended from the angle of the mouth to the mandibular angle on the right side of the face.

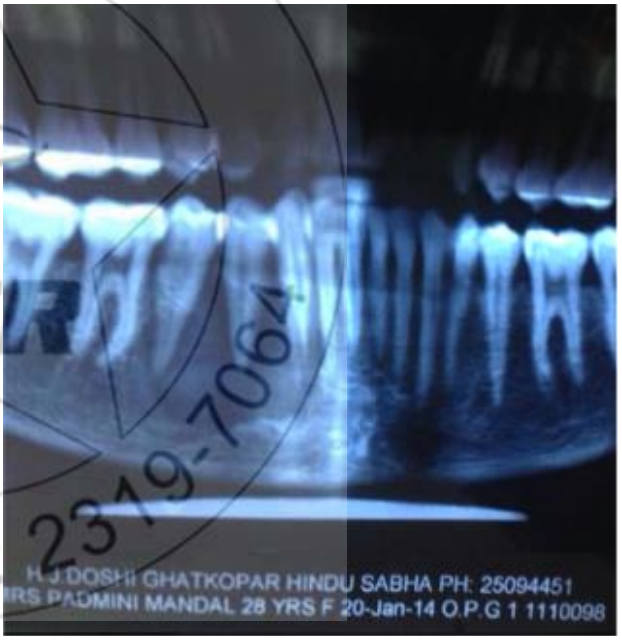
The swelling was firm in consistency, tender on palpation and the temperature was normal.

On intraoral examination, localized swelling was present on the right mandible in the alveolar region. The swelling extended from 43 posteriorly to 45. The teeth involved had grade 1 mobility.

3. Epidemiology

- Although central giant cell granuloma is seen in all age groups it is more commonly seen in young especially those under the age of 30 years.
- It is more common in females than in males.
- A study of 34 cases by Austin, over 60% of their cases were under the age of 30 years.

Radiological Features



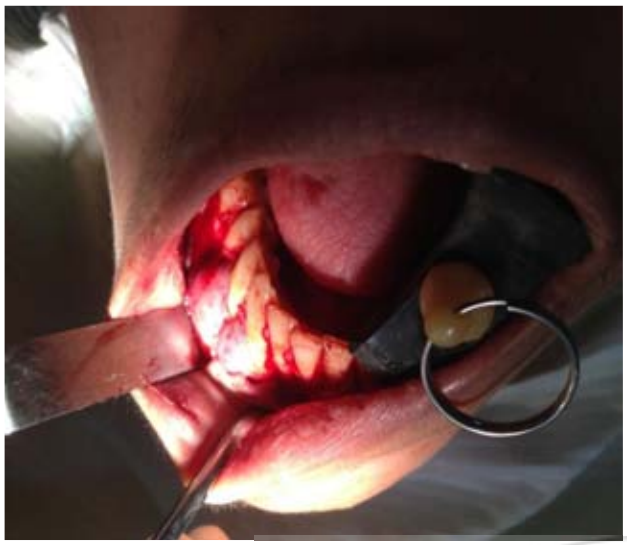
- On radiographic examination, a continuous radiolucency with a smooth border is seen surrounding 43, 44 and 45.
- Extensive bone destruction observed.

Differential Diagnosis

Based on clinical and radiographic examination

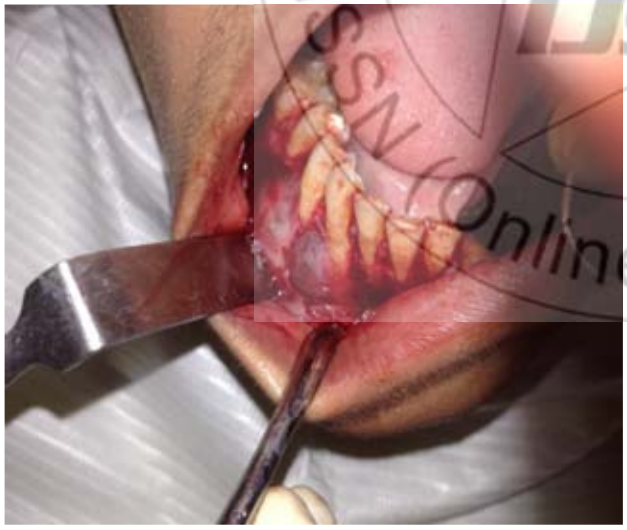
- Ameloblastoma
- Odontogenicmyxoma
- Ameloblastic fibroma,
- Ossifying fibroma
- Cyst

Surgical Line of Treatment

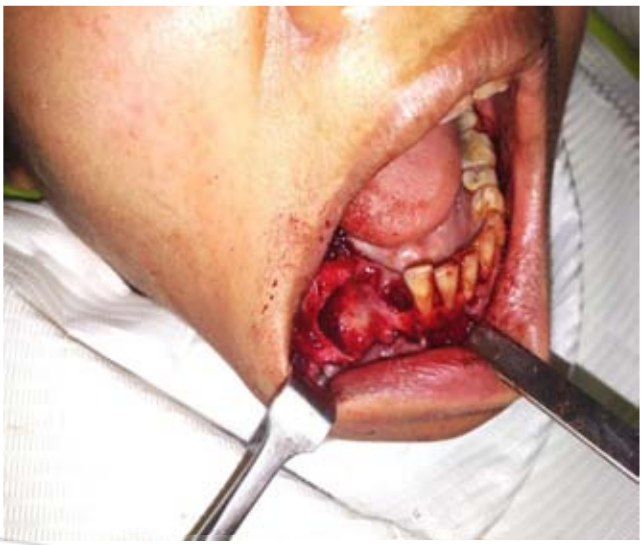


- Local anesthesia was administered to the patient at the site of the tumour.
- A mucoperiosteal flap was elevated following an incision.
- The tumour was exposed showing a bluish grey surface.
- The tumour was excised in total along with the teeth involved (43, 44, 45).
- Proper curettage was done and bleeding was controlled.
- Primary closure of the affected site was then done by suturing with 3-0 silk.
- Patient was called for follow-up and suture removal after ten days.

Before and After Surgery



Before



After Histologic Findings

4. Gross Features

Specimen consists of multiple brownish biopsy tissue with three teeth totally weighing 10 gm. and measuring 4 x 3 x 2 cm.

The cut surface of brownish soft biopsy tissue is firm and show creamish brown and reddish brown areas.

Two teeth are seen attached together. It shows a nodular lesion in periapical area measuring 1 x 0.5 x 0.5 cm.

The cut surface is reddish brown and soft to firm.

5. Microscopic Features

- The sections reveal a benign lesion composed of loose fibrillar connective tissue stroma with many interspersed proliferating fibroblasts and small capillaries.
- Multinucleated giant cells are seen scattered within it.
- Foci of extravasated blood and associated hemosiderin pigment, some of it are seen phagocytosed by macrophages.
- Osteoid is seen at the periphery of the lesion.
- No evidence of malignancy.

6. Discussion

- CGCG is an intra osseous lesion which occurs predominantly in teens and adults. 60 to 70% of cases are diagnosed in patients younger than 30 year old.
- In the jaws, lesion develops in the mandible more frequently than maxilla.
- Sometimes these lesion tends to cross the midline.
- Females are affected more frequently than males.
- Aggressive central giant cell lesions have been described as painful, rapidly growing and producing cortical perforation, root resorption.
- The most widely accepted method of surgical treatment of CGCG is aggressive curettage.
- Curettage of the tumour mass followed by the removal of the peripheral bony margins results in a low recurrence rate and good prognosis.
- Intralesional injection of corticosteroids has been proposed as a non surgical method of management of CGCG.
- It remains controversial because some surgeons have not been able to duplicate the original success of this method.
- The use of exogenous calcitonin may have some merit in the treatment of aggressive lesions.
- It can be administered in two different modes i.e. 100 IU calcitonin subcutaneously daily or 50 IU calcitonin subcutaneously and 200 IU nasal spray daily.
- Function of giant cells is inhibited by calcitonin.

7. Conclusion

- CGCG though a rare disease of head and neck sometimes shows an aggressive behavior and hence correct diagnosis is established by correlating clinical and histological features.
- Surgery is the traditional and accepted treatment but may be combined with local injection of steroids and calcitonin to avoid recurrence.

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