

CENTRAL GIANT CELL GRANULOMA

Farheen Jahan^{1*}, Rashmi Sapkal² and Aqsa Tamboli³¹Post Graduate Student, Department of Oral Medicine and Radiology, M.A. Rangoonwala College of Dental Sciences and Research Centre, Pune.²Reader, Department of Oral Medicine and Radiology, M.A. Rangoonwala College of Dental Sciences and Research Centre, Pune.³Post Graduate Student, Department of Oral Medicine and Radiology, M.A. Rangoonwala College of Dental Sciences and Research Centre, Pune.***Corresponding Author: Farheen Jahan**

Post Graduate Student, Department of Oral Medicine and Radiology, M.A. Rangoonwala College of Dental Sciences and Research Centre, Pune.

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ABSTRACT

Central giant cell granuloma is an uncommon, benign, and proliferative lesion whose etiology is not defined. It is considered widely to be a non-neoplastic lesion. Although formerly designated as giant cell reparative granuloma these lesions were found to be destructive rather than reparative, the word “reparative” was omitted from the term and the terminology is central giant cell granuloma. Presenting a case report of a male patient of aged 27 years having chief complaint of swelling since 1 year and pain since 4 to 6 months present at the lower left back region of the jaw. Correlating all clinical features and all investigation we finally diagnosed this case as central giant cell granuloma.

KEYWORDS: central giant cell granuloma, aggressive lesion, non-aggressive lesion.**INTRODUCTION**

It was in 1953 that JAFFE who first introduced the term central giant cell reparative granuloma to distinguish this lesion from the giant cell tumor of long bones. However, since a reparative response was quite rare and most of these lesions were found to be destructive rather than reparative, the word “reparative” was omitted from the term and the terminology is central giant cell granuloma (CGCG). This is relatively uncommon pathologic condition accounting for less than 7% of all benign lesions of the jaws.

CASE REPORT

A male age 27 year reported to the Department of Oral Medicine and Radiology, with the chief complaint of pain and swelling in lower left back teeth region since 6 months.

HISTORY OF PRESENT ILLNESS

Patient was apparently asymptomatic six month back, when he experienced a swelling in left lower back region of the jaw. Patient gives history of loosening of his 2 teeth of left lower side on its own and then after few days of which he noticed swelling.

Swelling was smaller in size and had disappeared after taking medication but again started reappearing and increased in its size.

He complains of mild pain. Pain was dull aching and continuous. Pain had increased in its intensity while eating since 2 to 3 days. Past medical and family histories were noncontributory.

Personal history & Oral hygiene Habit

History revealed as patient is non-vegetarian and brushes once in a day with paste and brush, there is history of deleterious habits.

Habit: Patient has habit of chewing tobacco since 6 to 7 years, 2 to 3 times in a day. Tobacco/Quid: He keeps tobacco quid in lower labial vestibule of mouth for 20 to 30 minutes.

EXTRA ORAL EXAMINATION**General****Vital Signs**

Pulse rate: 69 beats/min Respiratory rate : 18 cycles/min

Temperature: Afebrile

On general physical examination, patient was moderately built and nourished for his age and all vital signs revealed as normal.

Extra Oral Examination

On extraoral examination, head, hair, nose, eyes, ears and salivary glands are normal except, there is diffused swelling seen on left side of the mandible which starts anteriorly from the 1 cm from the angle of the mouth and

goes posteriorly to angle of the mandible, superiorly it start from line joining the angle of the mouth to the lower border of ear lobule and inferiorly limits lower border of the mandible. It was measuring about 2×3 cm in size approximately. The skin over the swelling appears to be normal with no secondary changes. On palpation, temperature was raised and tender on palpation. It was soft in consistency all over the area. Fluctuation, compressibility, and reducibility were noncontributory.

INTRAORAL EXAMINATION

- Oval shaped growth is evident on the left buccal mucosa opposite to 35,36,37 size approx. 3.5×4.5 cm. There is evidence of dome shaped growth over the oval growth, opposite to 35 originating from attached gingivae size of approx. 1.5×1.5 cm.
- Shape: oval and dome
- Tender on palpation
- Border: circular
- Edges: regular
- On intraoral examination, all soft tissues like as buccal mucosa, labial mucosa, vestibule, tongue and palate appears to be normal except labial vestibule and left buccal vestibule. Expansion of cortical plate on buccal side which was firm in consistency. It was tender on palpation in relation to 35,36 region.
- Recession with 43,42,41,31,32,33,34.
- Stain +
- Grade I mobility with 35,36.
- There was evidence of grayish white patch in relation to mesial aspect of 34 to distal aspect of 43.
- Scrap-able, non-tender patch
- Size approx. 2.5×1.5 cm.



OCCLUSAL: Well demarcated radiolucency is evident extending from 33 to 37 region. Thinning of cortical plate and in addition to buccolingual cortical plate expansion in relation to 34, 35, and 36, 37 regions.

There is definite radiolucency extending from distal aspect of 33 progressive to apical 1/3rd of 36 than progressing towards mesiodistally till to that of mesial aspect of 37 region. The loss of alveolar bone extended from 2 mm away from the distal aspect of 36. Definite loss of lamina dura with definite radiolucency to the

DIAGNOSIS

- On above symptoms and signs, a provisional diagnosis - central giant cell granuloma with respect to (w.r.t) 35, 36. was made.
- Tobacco induced keratosis w.r.t habit.
- Differential diagnosis of aneurysmal bone cyst, ameloblastoma and CEOC, CEOT was considered.

Investigations

- EPT
- FANC
- Complete hemogram
- CBC
- BT, CT
- ESR
- Serum calcium, phosphorus
- Alkaline phosphatase
- Occlusal radiograph
- OPG
- CBCT of 3rd quadrant EPT:
- No response with 35
- No response with 36 At 30 to 35
- No response with 37
- Immediate response with 46,47- at 3.

fine needle aspiration cytology was nonproductive
Complete hemogram revealed as normal except, rise in ESR 72 mm/hour.

Biochemical test revealed as serum calcium 9.8 mg/dl, serum phosphorous 3.0 mg/dl, alkaline phosphatase 245 U/L.



OPG: showed a solitary radiolucent lesion in the left side of mandible extending from 33 to 36 with a fine granular bone pattern with mixture of straight and coarse faint wispy septa.

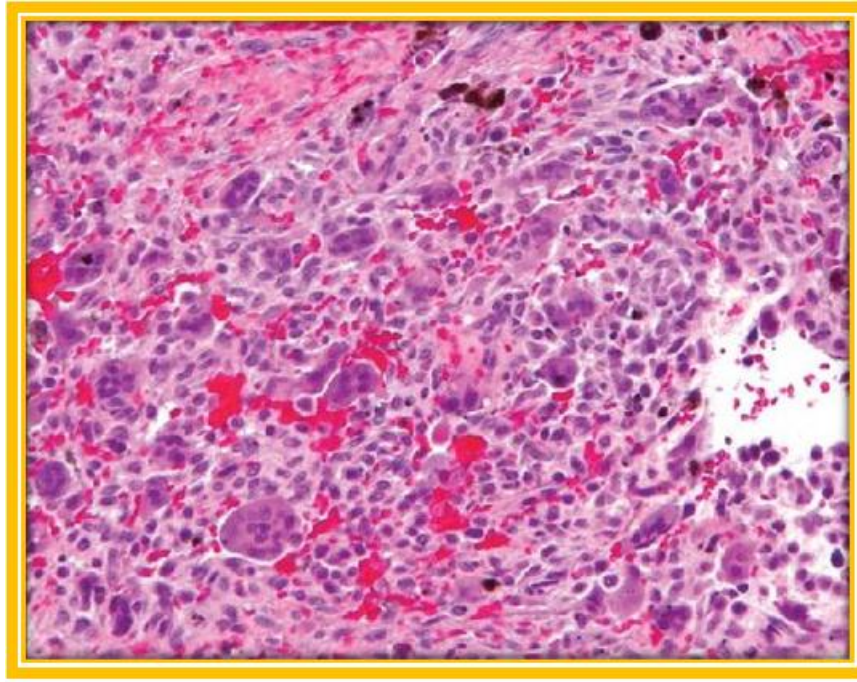
roots of 36. Altered trabecular pattern of the bone in relation to 33 to 36 region. Definite radiolucency with definite sclerotic border extending from distal aspect of 33 to distal to 36 regions. Multiple bony septae seen within the radiolucent lesion, faint trabecula present at the lower border of the periphery of 37 region. Root

resorption with 34 and 35 and distal root of 36. Spike root appearance with mesial root of 36. Periapical R/L associated with both the root 36 and 37 region. Inferior

alveolar nerve canal displaced towards the inferior direction.

RADIOGRAPHIC DIAGNOSIS: AMELOBLASTOMA

Excised lesion sent for histopathological examination.



Histopathological investigation revealed as cellular connective tissue stroma, multinucleated giant cell, immature woven bone at the periphery of the lesion and areas of hemorrhage.

prophylaxis Surgical phase: Curettage with enblock resection (surgical removal) Maintenance phase: regular recall (follow-up)
Prognosis: Fair

Final Diagnosis: CENTRAL GIANT CELL GRANULOMA

TREATMENT

Emergency phase: stoppage of habit

Etiotrophic phase: patient education and motivation. Oral



Figure 1

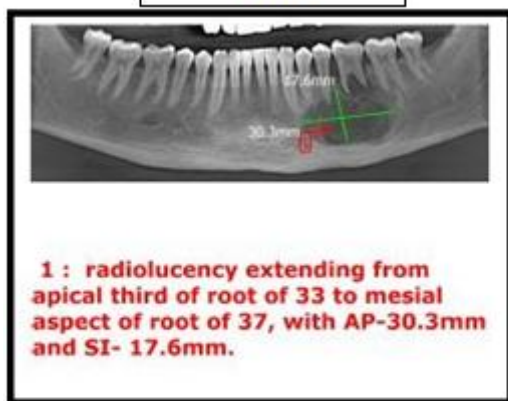
Figure 2



Figure 3



Figure 4



1 : radiolucency extending from apical third of root of 33 to mesial aspect of root of 37, with AP-30.3mm and SI- 17.6mm.

Figure 5

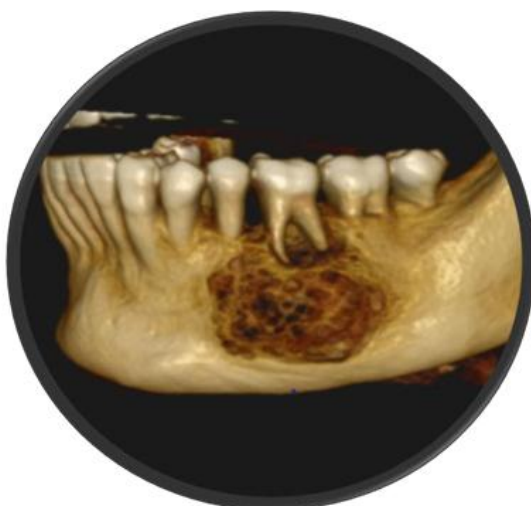


Figure 6

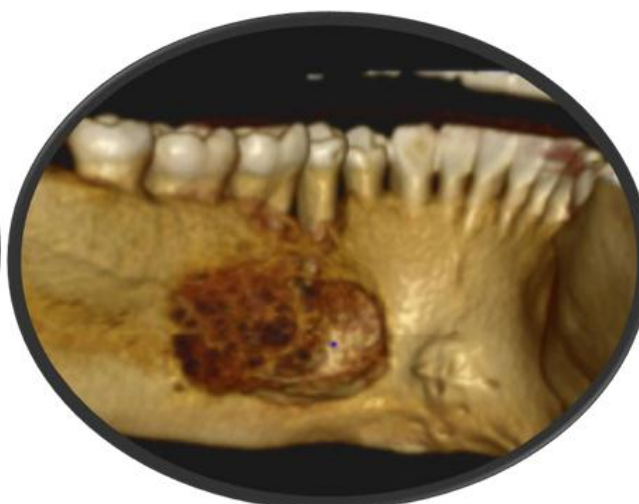


Figure 7

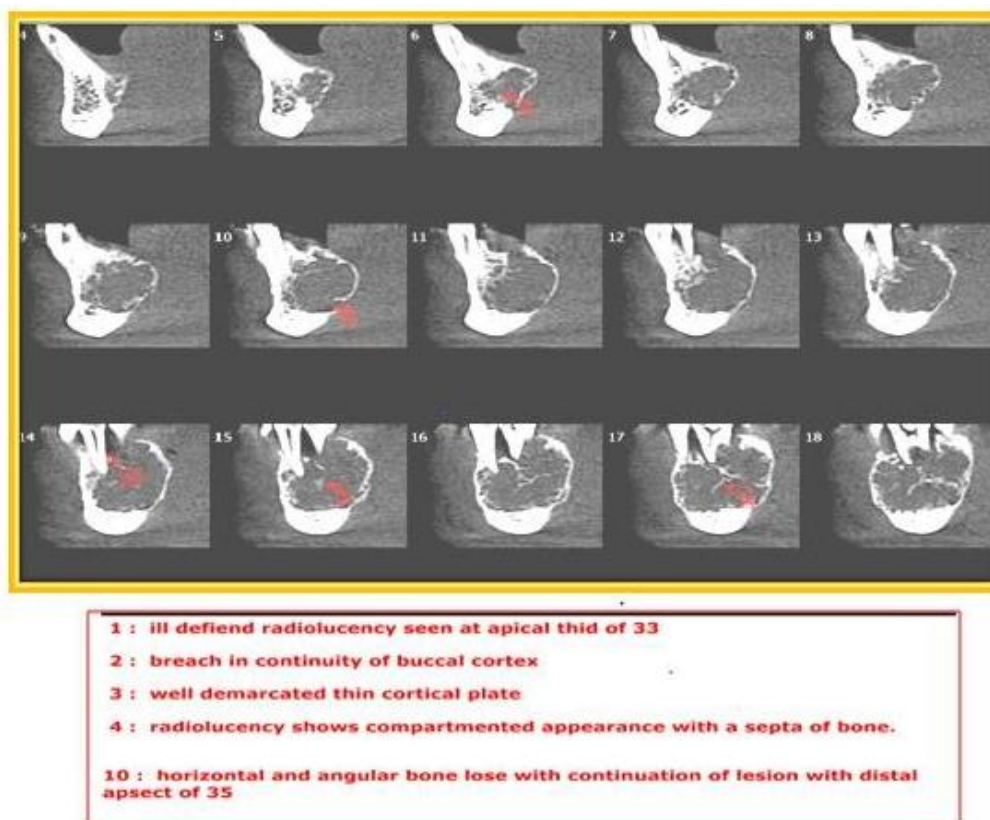


Figure 8

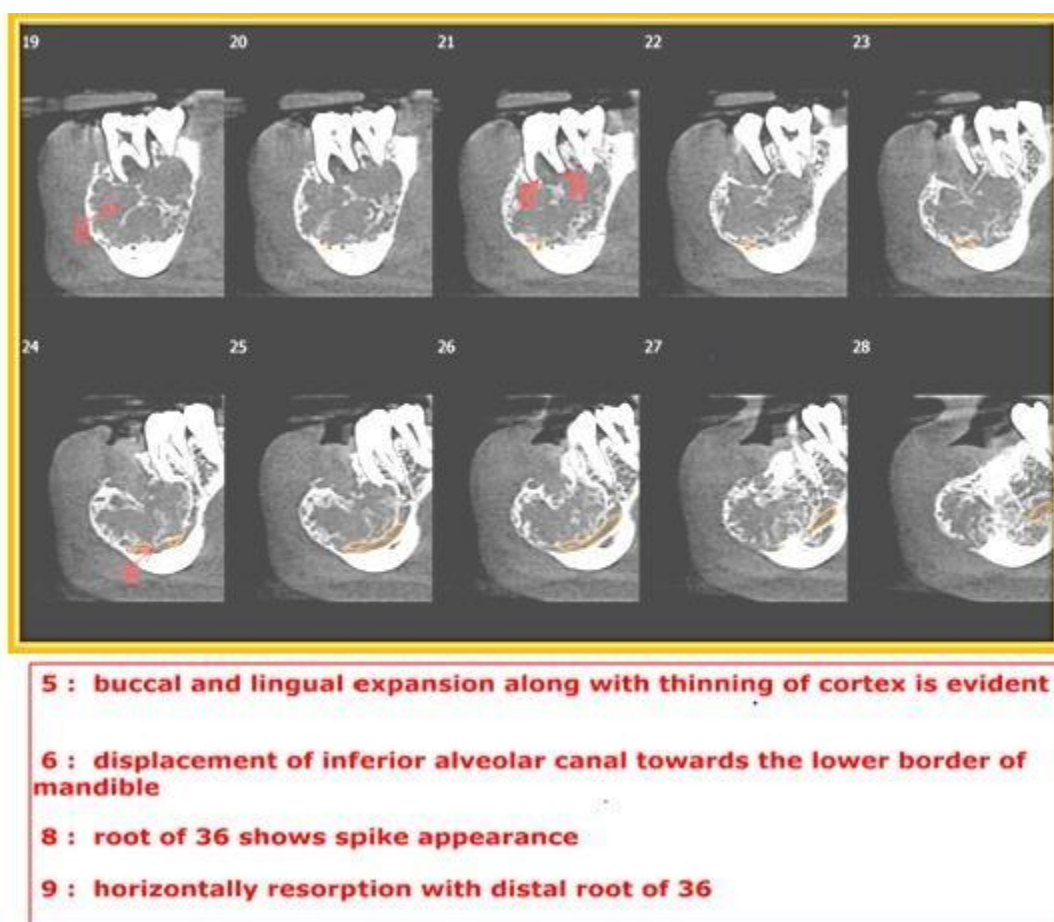


Figure 9

DISCUSSION

It is defined as “An intraosseous destructive lesion of the mandible and maxilla in which large lesions expand the cortical plates, cause movement of teeth, and produce root resorption; it is composed of multinucleated giant cell in a back ground of mononuclear fibrohistiocytic cells and red blood cells.”

TYPES

Based on clinical and radiographic features, several groups of investigators have suggested that central giant cell lesions of the jaw may be divided into two categories.

Nonaggressive:- Slow growing, doesn't show root resorption or cortical perforation and often shows new bone formation.

Aggressive:- Grows quickly, shows pain, cortical perforation and root resorption.

RADIOGRAPHIC APPEARANCE

- **Periphery:-** Slower growing lesions have a well-defined periphery In Quick growing lesions the periphery shows no evidence of cortex. They may have more poorly defined borders, an appearance that may appear more aggressive, even malignant.
- **Internal Structure:-** Some CGC lesions show no evidence of internal structure and may be radiolucent. Other lesions have a subtle granular pattern of calcification, this granular bone pattern is organized into wipsy striations or septa. (multilocular). Unlike conventional septa, those seen in CGC lesions are manufactured by cells within the lesion, they donot represent remnant normal bone. Septa originate at right angle to cortex.
- **Effect on adjacent structures:-** CGC lesions have strong propensity to expand bone borders and displace anatomic structures. Expansion is uneven or undulating in nature, which may give the appearance of a double boundary when the expansion is assessed using a occlusal radiograph. In some cases bone cortex is destroyed- More often in maxilla Cortical bone destruction gives lesion a malignant appearance. The inferior alveolar canal may be displaced in an inferior direction.
- **Effect on adjacent teeth:-** CGC lesions often displace and resorb tooth roots. Resorption is profound and irregular in outline. The lamina dura of teeth within lesions are usually lost.

CONCLUSION

In conclusion, the present case represents an unusual case of a central giant cell granuloma involving posterior region of the mandible.

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