

Central Giant Cell Granuloma of the Mandible: A Rare Presentation

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ABSTRACT

Central giant cell granuloma (CGCG) is an intraosseous lesion consisting of cellular fibrosis tissue that contains multiple foci of hemorrhage, multinucleated giant cells and trabeculas of woven bone. This lesion accounts for less than 7% of all benign jaw tumors. Jaffe considered it as a locally reparative reaction of bone which can be possibly due to either an inflammatory response, hemorrhage or local trauma. Females are affected more frequently than males. It occurs over a wide age range. It has been reported that this lesion is diagnosed during the first two decades of life in approximately 48% of cases and 60% of cases are evident before the age of 30. It is considerably more common in the mandible than in maxilla. The majority of the lesions occur in the molar and premolar area, and some of these extend to the ascending ramus.

The presence of giant cell granuloma in the mandibular body area, entire ramus, condyle and coronoid creates a diagnostic and therapeutic challenge for the oral and maxillofacial surgeons. The purpose of this report is to describe an unusual presentation of CGCG involving mandibular body, ramus, condylar and coronoid processes and to discuss the differential diagnosis, radiographic presentation and management of this lesion.

Keywords: Giant cell granuloma, Mandible, Histopathological examination, Resection, Primary reconstruction.

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CASE REPORT

A 23-year-old young lady from the remote village of Uttarakhand state reported to the Department of Oral and Maxillofacial Surgery, with a painless swelling involving left side preauricular and mandibular region of approximately 6 months duration. Patient had difficulty in speech and chewing as cheek part was being crushed in the inter-occlusal space on left side. Clinical examination revealed large swelling which was diffused, nontender with ill-defined margins, nonfluctuant and noncompressible with restriction of mandibular movements (Fig. 1).

Occlusion was disturbed as swelling had pushed maxillary posterior teeth palatally. A panoramic radiograph exhibited a well defined mixed radiopaque, radiolucent lesion extending from left side premolar region to condylar head (Fig. 2).

On the basis of history, clinical finding and radiologic finding differential diagnosis of ameloblastoma, Pindborg's tumor, true giant cell lesion, odontogenic keratocyst was made. Biopsy was planned and was done to send for histopathological examination. This gave the impression of giant cell granuloma.

A coronal computed tomography (CT) revealed an expansile, well defined lesion, occupying the body, ramus, condyle and coronoid process. Multiple perforations were noted beyond the ossified thin borders of the lesion. Axial CT revealed intrabony lesion with cortical expansion on lingual and buccal sides (Fig. 3).

On histopathological and radiological findings diagnosis of aggressive CGCG was made. Surgical resection of left side mandible with disarticulation was planned. Under general anesthesia, the mandible was approached by lip split and submandibular incision (Fig. 4).

Lesion was resected with disarticulation on left side (Figs 5 and 6).

Primary reconstruction was done with titanium reconstruction plate with condylar part (Fig. 7).

Finally on histopathological examination the final diagnosis of CGCG was confirmed. Patient is on follow-up but no clinical or radiographic signs of recurrence are evident.

DISCUSSION

The CGCG appears as a painless expansile mass. The clinical behavior of the CGCG ranges from a slowly growing



Fig. 1: Pretreatment frontal facial view. The mass involves the left-side of face causing facial asymmetry

asymptomatic swelling to an aggressive lesion that manifests with pain, local destruction of bone, root resorption or displacement of teeth.¹ In the presented case the female patient was conscious about her facial asymmetry due to painless gradually increasing swelling on left side of mandible. The case presented in this article confirms to the reported site, sex, age and jaw.² This lesion usually occurs

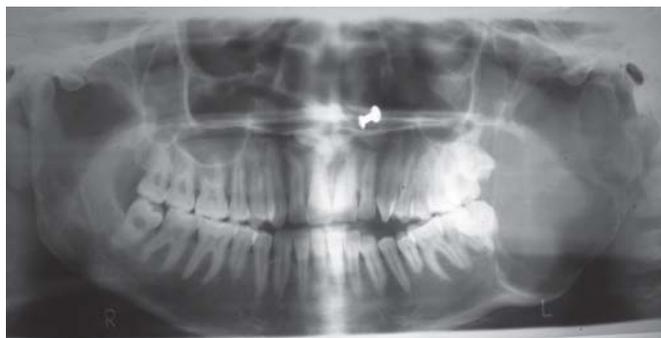


Fig. 2: Preoperative orthopantomogram showing lytic lesion posterior part of mandible (left-side)



Fig. 3: A coronal computed tomography revealing an expansile, well-defined lesion, occupying the body, ramus, condyle and coronoid process

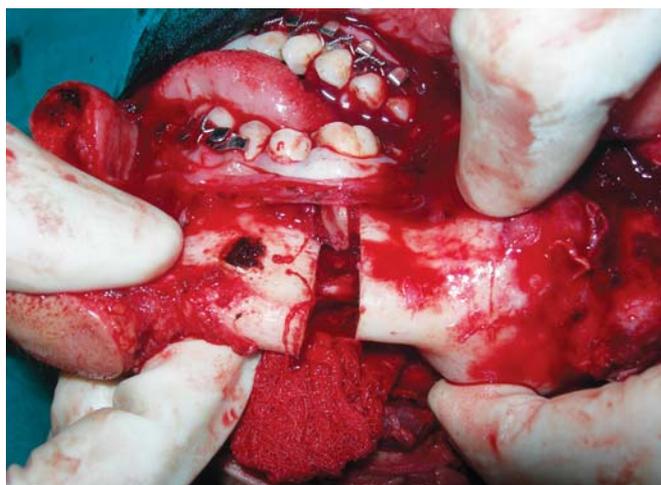


Fig. 4: Mandible approached by lip split and submandibular incision

in patients younger than 30 years, is more common in females than males, and is more common in the mandible than in the maxilla. The lesion has been reported to be confined to the tooth bearing area of the jaws and is more common in anterior portion of the mandibular body.³

The radiologic features of giant cell granuloma have not been clearly defined, the lesion may appear as unilocular or multilocular radiolucency with well defined or ill defined margins with varying degrees of expansion of the cortical plates.⁴ Radiographic appearance of the lesion is not pathognomonic and may be confused with that of many other lesion of the jaws.⁵

Various methods have been described for the treatment of CGCG of the jaws. Curettage alone or in combination with resection with or without continuity loss is the treatment modality most often used.⁶ Some investigators has reported successful treatment, using intralesional injections of corticosteroids. As corticosteroids inhibit osteoclasts in narrow cultures and in conditions of absorption of bone by increasing apoptosis, their use for giant cell granuloma has been advocated.^{7,8} Bisphosphonates have been used to treat giant cell lesions and fibrous dysplasia in children because of their action in causing inhibition of osteoclastic bone resorption. The methods of management are extremely variable ranging from simple enucleation to radicle resection. Surgical treatment is modified depending upon the anatomic location, size of lesion, clinical behavior, periosteal or nerve involvement. But in this case perforation of cortical plates prompted us for surgical resection and primary reconstruction with titanium plates.

Purpose of this case report is that the presentation of CGCG of the mandible involving the body ramus condyle and coronoid processes is rare and can be a diagnostic challenge for an oral and maxillofacial surgeon.

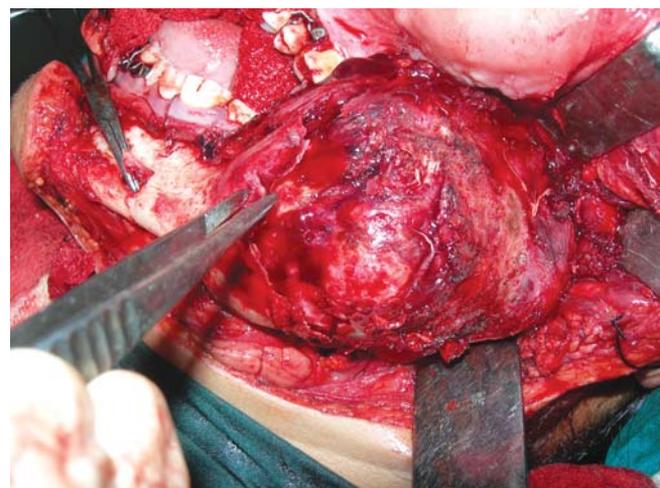


Fig. 5: Lesion resected with disarticulation on left side

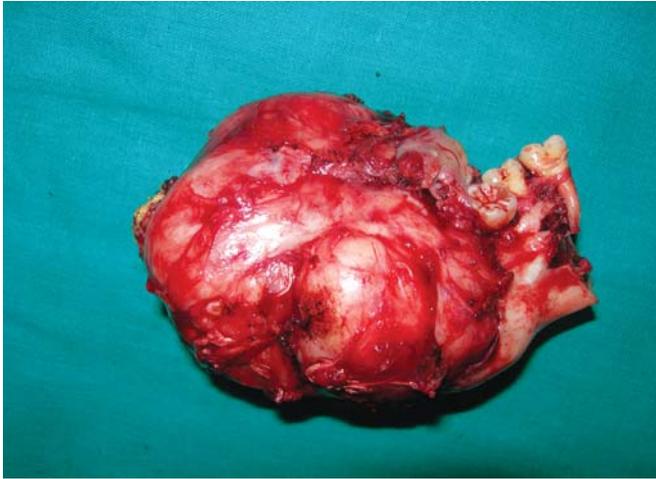


Fig. 6: Resected tumor mass showing buccal cortical perforation

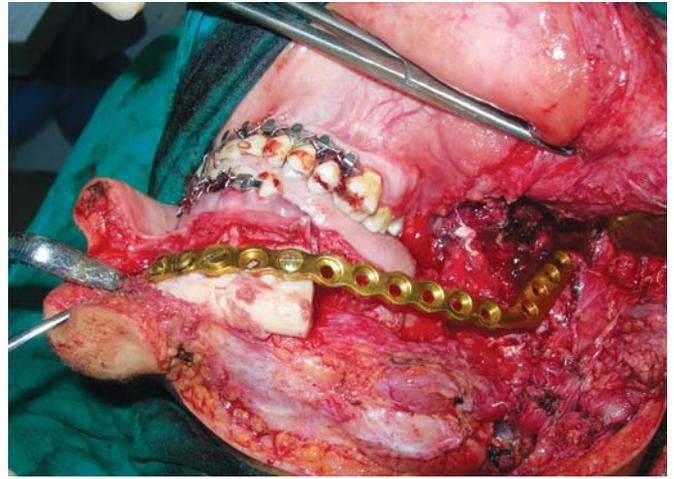


Fig. 7: Primary reconstruction of defect with titanium reconstruction plate

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