Non Aggressive Yet Massive Central Giant Cell Granuloma Of The Mandible (A Rare Case Report With Surgical Management)

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Abstracts: Central giant cell granuloma (CGCG) is an uncommon benign intraosseous lesion of the jaws accounting for approximately 7% of all benign tumors of the jaws. The traditional treatment of CGCG is surgical removal. However, the extent of tissue removal ranges from simple curettage to en bloc resection and reconstruction. This article describes a massive yet nonaggressive type of central giant cell granuloma involving the body of the mandible in a 32 years old female with its surgical management. [Pankajakshi Bai K et al NJIRM 2012; 3(2) : 185-188]

Key words: central giant cell granuloma, mandible, maxilla

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Introduction: The central giant cell granuloma (CGCG) of the jaws is an uncommon benign lesion accounting for approximately 7% of all benign tumors of the jaws[1, 2]. It was introduced for the first time by Jaffé in 1953. Although its etiology and pathogenesis is even unknown, its histology and clinical behaviour has been studied in detail[2, 3, 4]. The clinical behaviour of CGCG ranges from a slowly growing asymptomatic swelling to an aggressive lesion that manifests with pain, local destruction of bone, root resorbtion, or displacement of teeth. Hence it is classified as aggressive and non aggressive type. Aggressive subtypes of CGCG have a tendency to recur after excision[2, 5, 6]. CGCG usually occurs in patients younger than 30 years, is more common in females than in males, and is more common in the mandible than in the maxilla[4,3]. The lesion has frequently been reported to be confined to the tooth-bearing areas of the jaws[4, 7] and is more common in the anterior portion of the mandible, often crossing the midline[3.4].

The radiologic features of the CGCG have not been clearly defined, and conflicting descriptions appear in various textbooks and articles[3,6]. The lesion may appear as a unilocular or multilocular radiolucency, with well-defined or ill-defined margins and varying degrees of expansion of the cortical plates.

The histologic features of CGCG have been extensively discussed[4, 8], and it is defined by the World Health Organization as an intraosseous lesion consisting of cellular fibrous tissue that contains multiple foci of hemorrhage, aggregations of multinucleated giant cells, and, occasionally, trabaculae of woven bone[8].

The traditional treatment of CGCG is surgical removal. However, the extent of tissue removal ranges from simple curettage to en bloc resection[9]. Curettage has also been supplemented with cryosurgery[10] and peripheral ostectomy[11]. It has also been treated by nonsurgical methods such as radiotherapy[11], daily systemic doses of calcitonin[12] and intralesional injection with corticosteroids[13].

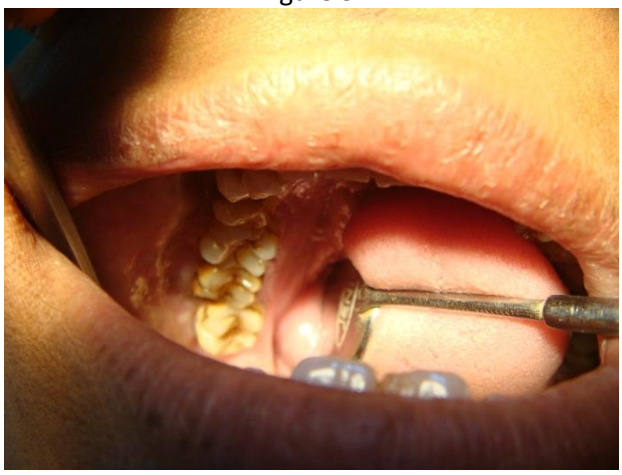
Differential diagnosis include odontogenic keratocyst (OKC), ameloblastoma,,odontogenic myxoma, hemangioma, central odontogenic fibroma,hyperthyroid tumor, calcifying epethelial odontogenic tumor (CEOT) and cherubism[2,3,4].

Case Report: Patient reported to the department of Oral and Maxillofacial surgery with a chief complaint of swelling in the lower left jaw measuring to around 6x3x3 cm; extending from left angle of the jaw till the midline and inferiorly it extended below the lower border of the mandible (Figure1,2). Intra oral examination revealed obliteration of the buccal vestibule and expansion

Figure 1 Figure 2

of the buccal and lingual cortical plates (Figure 3).The swelling was first noticed 2 years back which was initially small in size. With a villagers superstitious belief that it is a consequence of an evil eye, a tattoo of 1cm radius circle was placed over the swelling(Figure 2) and the lesion was neglected there after considering that it would vanish with time. The lesion then gradually progressed to the present size and was not associated with pain and had no sensory disturbances.

Figure 3



Radiologic appearance: (Figure 4,5) Orthopantamograph revealed a well defined multilocular radiolucency extending from mandibular right central incisor anteriorly, to the angle of the mandible posteriorly; superiorly it extended till inter radicular bone and inferiorly 1cm below the lower border of the mandible. Although there is no evidence of root resorbtion, there was slight displacement of the premolar roots medially.

Figure 4

Figure 5

CT Scan: (Figure 6,7,8). Revealed an osteolytic lesion with expansion of the buccal and lingual cortical plates.

Figure 6

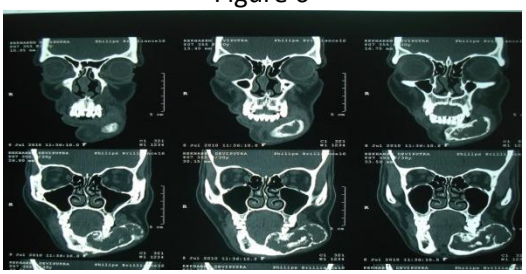


Figure 7

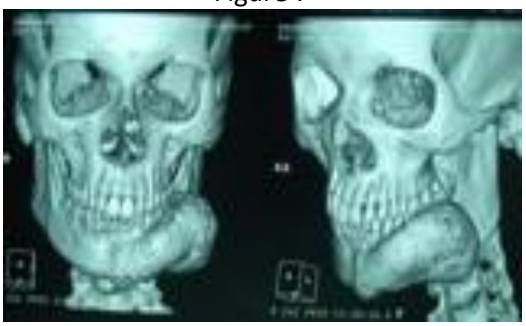
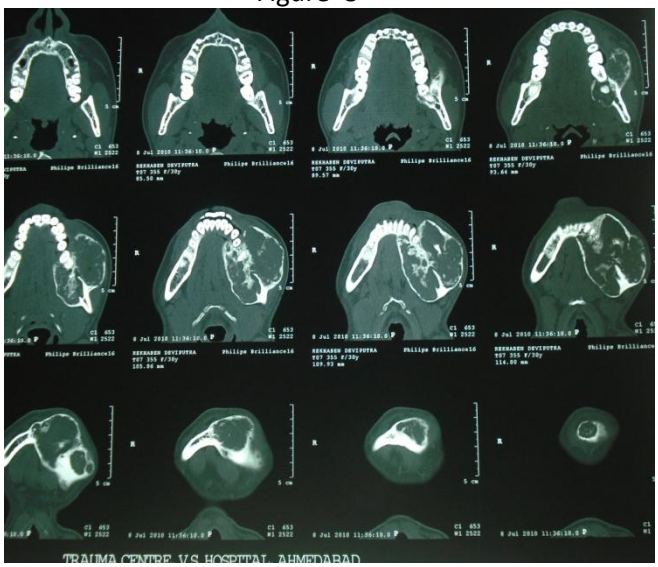


Figure 8



Biopsy: Incisional biopsy was performed intraorally in the angle region of the mandible (Figure 9) and a specimen of soft tissue, hard tissue and intra lesional medullary part of the bone was sent for histopathological examination. Surgical treatment: Segmental/subtotal mandibulectomy was performed with reconstruction using stainless steel reconstruction plate. After 6 months follow up, the patient is still on regular check up visits and is uneventful. (Figure 10,11,12,13,).

Figure 9

Figure 10

Figure 11

Figure 12

Figure 13

Discussion: The etiopathogenesis of the CGCG of jawbones is not defined and has not been clearly established but it has been suggested that it is the result of an exacerbated reparative process related to previous trauma and intraosseous haemorrhage that triggers the reactive granulomatous process[6,7,14] . But in this case as there was no history of trauma or previous extractions, the etiology remains obscure.

The radiologic appearance of the lesion is not pathognomonic and may be confused with that of many other lesions of the jaws[3,6] eg:odontogenic keratocyst (OKC), ameloblastoma, odontogenic myxoma, hemangioma, central odontogenic fibroma,hyperthyroid tumor, Calcifying epithelial odontogenic tumour (CEOT) and cherubism. But, taking into evidence the histopathologic findings and after co- relating the clinicopathologic behaviour and laboratory findings with the other lesions, this case is considered to be CGCG[2,3,4].

Although, the lesion was huge showing resorbtion and expansion of the buccal and lingual cortical plates it cannot be considered under the aggressive sub type. The aggressive sub type of central giant cell granuloma shows rapid growth, resorbtion of roots and is associated with pain[2,5]. In this case as there was slow progression to the present size, no

resorbtion of tooth and was not associated with pain; it cannot be considered as aggressive in nature. Hence it can be considered as a massive non aggressive type of central giant cell granuloma

The most aggressive or recurrent lesions require en bloc bone resection and reconstruction, since it can determine a bone defect and teeth loss[9]. A case treated by means of excision of a mandibular CGCG, reconstruction using autogenous iliac crest graft, dental implants and overdenture prosthesis has been reported[15]. In the present case although the lesion had not shown the aggressive nature, resection and reconstruction was performed considering the massive extent of the lesion and expansion of the buccal and lingual cortical plates. Considering the recurrence rate of central giant cell granuloma the surgical defect was reconstructed using stainless steel reconstruction plate and the reconstruction of the defect using autogenous iliac crest graft was considered for secondary surgery after successful follow up period to avoid second morbidity in case of recurrence.

Conclusion: Although, our case meets the criteria of age and sex predilection, of central giant cell granuloma; considering the location, extent of the lesion and its nature i.e non aggressive yet massive, it can be considered under rare cases.

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