

## Giant Cell Granuloma: A Case Report

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**Abstract:** Central giant cell Granuloma is a intraosseous benign lesion. It occurs mostly in first three decades of life and commonly occurs in females. The lesions grew slowly and usually presented clinically as painless swellings. Radiographically they appeared as well-defined unilocular or multilocular radiolucencies with undulating borders. This case is a rare occurrence of Central Giant Cell Granuloma of the mandibular condyle.

**Key words:** Benign • Condyle • Giant Cell Granuloma • Lesion • Mandible

### INTRODUCTION

Giant Cell Granuloma was first described by Jaffe 1953 [1] to distinguish it from Giant cell Tumor. He established two pathological entities in this regard; the Central Giant Cell Granuloma (CGCG) arising within the bone and Peripheral Giant Cell Granuloma (PGCG) arising in the soft tissue mass. CGCG is a benign intraosseous lesion. The true nature of this lesion is controversial and remains unknown, the three competing theories are that it could be a reactive lesion, a developmental anomaly or a benign neoplasm [2-4]. Neville *et al.*[5] considered this entity to be a non-neoplastic lesion and the World Health Organization (WHO) [6] classified it as a bone-related lesion, not a tumor, although its clinical behaviour and radiographic features often are those associated with a benign tumor.

The CGCG of the jaw accounts for approximately 7% of all tumors of the jaw<sup>7</sup>. It may occur at any age but is more commonly seen in the first three decades of life. The incidence of CGCG in the general population is estimated to be 0.0001%<sup>8</sup>. Gender predilection reports are variable, but the majority occurs in females with a female-male ratio of approximately 2:1 [3, 5]. Lesions develop twice as often in the mandible with an epicenter anterior to the first molar in young patients and there is a tendency for the epicenter to occur in the posterior aspect of the jaws after the first two decades of life [2, 9]. In the

maxilla, the epicenter is more commonly anterior to the canine [2]. Lesions that have originated in the mandibular condylar head, as opposed to lesions extending into the condylar head, are very rare<sup>3</sup>. The clinical presentation of CGCG varies from a slow growing asymptomatic swelling to an aggressive lesion that manifests with pain, cortical perforation and root resorption [10].

**Case Report:** A 9 year old boy reported to the Department of Oral and Maxillofacial Surgery, Sree Balaji Dental College, Chennai, with the complaint of a painless swelling involving the right side of face. History revealed a non tender swelling in the pre-auricular region present since last two months and progressive restriction of mouth opening. Clinical examination revealed swelling was diffused, non tender, with ill defined margins, non fluctuant and non compressible measuring 2cm diameter overlying the right Temporomandibular Joint (TMJ). The region was not tender on palpation and no associated lymphadenopathy was seen.



Panoramic radiographs and CT images of the TMJ were acquired. The images demonstrated a lesion occupying the right condylar head and neck. The lesion was considerably expansile with segments of the expanded regions bordered by a

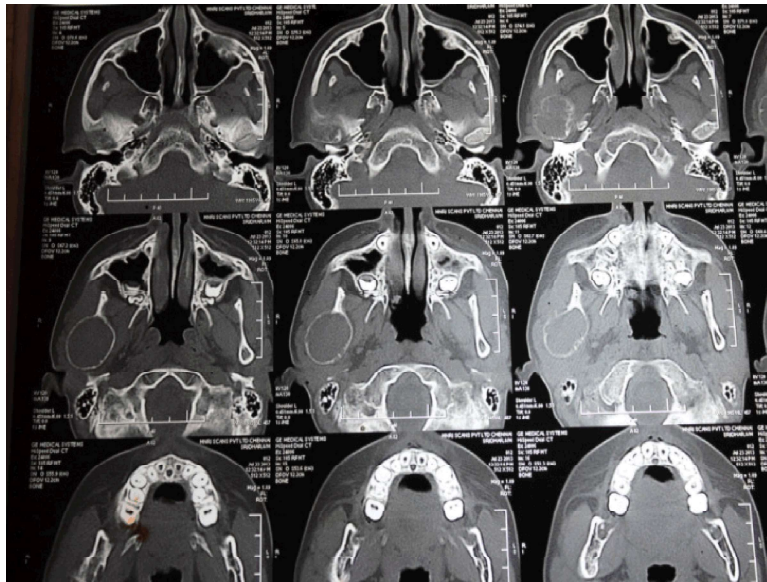
well-defined cortex and some regions bordered with an ill-defined granular bone periphery. There was a mixture of straight and coarse septa mixed with subtle and wispy septa which is a characteristic feature of CGCG.



Preoperative orthopantomograph showing lesion on right side condylar region



Coronal CT revealing an expansile, well defined lesion on condylar head



Diagnosis of Giant Cell Granuloma is normally made histological from an incisional biopsy. Histological investigation confirmed the diagnosis to be Giant cell granuloma with presence of multinucleated giant cells with proliferation of bland spindle cells. Areas of peripheral reactive bone formation and skeletal muscles fibres were noted.

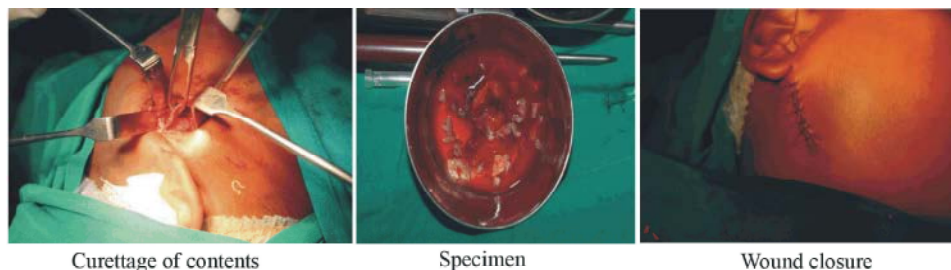
Conventional management is surgical and consists of enucleation and curettage. Aggressive curettage of the tumor mass followed by removal of peripheral bony margins was preferred as it results in low recurrence rate and good prognosis.



Retromandibular incision



Exposure of condyle



## DISCUSSION

Chuong *et al.* [10] and Ficarra *et al.* [11] suggested categorizing CGCG into aggressive and nonaggressive types based on their clinical and radiographic characteristics. The more common, non-aggressive, lesions grew slowly and usually presented clinically as painless swellings, with only 20% of patients complaining of pain or paresthesia [3, 5]. Radiographically they appeared as well-defined unilocular or multilocular radiolucencies with undulating borders. Aggressive lesions were encountered in a younger patient population and tended to grow faster and recur more often [3].

In the presented case, the 9 year old boy was conscious about his facial asymmetry due to painless, gradually increasing swelling on the right side of condylar region in lower jaw. The case presented in this article confirms to reported site, age, sex and jaw.

The CGCG usually occurs in patients younger than 30 yrs of age and is more commonly seen in females than males. It is also seen more commonly in the mandible than the maxilla. Radiologically the CGCG presents itself as a well defined lesion. Central giant cell granuloma appears as poorly defined unilocular radiolucency or multilocular radiolucency with scalloped borders. One of the key features of CGCG is its ability to cross the midline of the mandible. Small lesions can appear totally radiolucent, granular, or with wispy septa representing thin radiopaque lines of fine bone; giving the lesion its multilocular appearance.

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. Intralesional injections of corticosteroids have been used successfully, as has the systemic administration of calcitonin in the form of subcutaneous injections or nasal spray [12-15]. Recurrence rates have been reported to range between 11% and 49% [14]. Aggressive lesions should be managed by complete surgical resection to decrease the risk of recurrence. This therapy, however is

often associated with recurrences and in the case of large lesions it results in serious mutilation of the jaw and hence, the face. Loss of teeth and of dental germs in young patients is also often unavoidable. In these patients, calcitonin therapy is an attractive alternative [16].

In this case, surgical curettage of the lesion was preferred as it was not a aggressive lesion and a chance of recurrence of the lesion was much lower. Purpose of this case report was the presentation of CGCG of mandible involving the condylar process which is very rare and can be a diagnostic challenge for the Oral and Maxillofacial surgeon.

## CONCLUSION

This report presents characteristics of a rare occurrence of Central Giant Cell Granuloma of the mandibular condyle and the follow up of the case is of short time span, perhaps the study across larger population with a greater duration would throw more light on its rate of recurrence.

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