

Aggressive Central Giant Cell Granuloma in the Posterior Region of Mandible - A Case Report

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ABSTRACT

Central giant cell granuloma (CGCG) is an uncommon, benign, intraosseous bony lesion of the mandible and maxilla which is variably aggressive in nature. The incidence of an aggressive and recurrence nature is greatest in a female with a ratio of 2:1. Based on the clinical and radiographic features, Central giant cell granuloma can be classified as aggressive and non-aggressive lesions. Here we report a case of central giant cell granuloma in the posterior mandibular molar region which was aggressive in nature. The clinically and radiographically swelling was evaluated with displaced tooth, pain, cortical expansion, and root resorption. The treatment varies according to the nature of the lesion, this case was treated by conservative excision with continuity of the mandible.

Keywords: Aggressive, central giant cell granuloma, osteolytic lesion

INTRODUCTION

Central giant cell granuloma (CGCG) is a non-neoplastic, benign lesion that exhibits osteolytic behavior. CGCG in the mandible and maxillary region vary from asymptomatic lesion to symptomatic lesion. ^[1] The lesion was named giant cell reparative granuloma (GCRG) discovered by Jaffe in 1953. Later on, GCRG was changed to CGCG, due to the destructive nature of the lesion. ^[2] The CGCG etiology is still unclear, some factors associated with this lesion are trauma, genetic, and environmental factors. This aggressive nature of a case associated with pain, paresthesia, cortical bone perforation, and non-aggressive lesion generally asymptomatic and found during the routine, radiographic exposure. ^[3]

CASE REPORT

A 47-year female patient was reported to our outpatient department of oral medicine and radiology with the chief complaint of pain and swelling over the

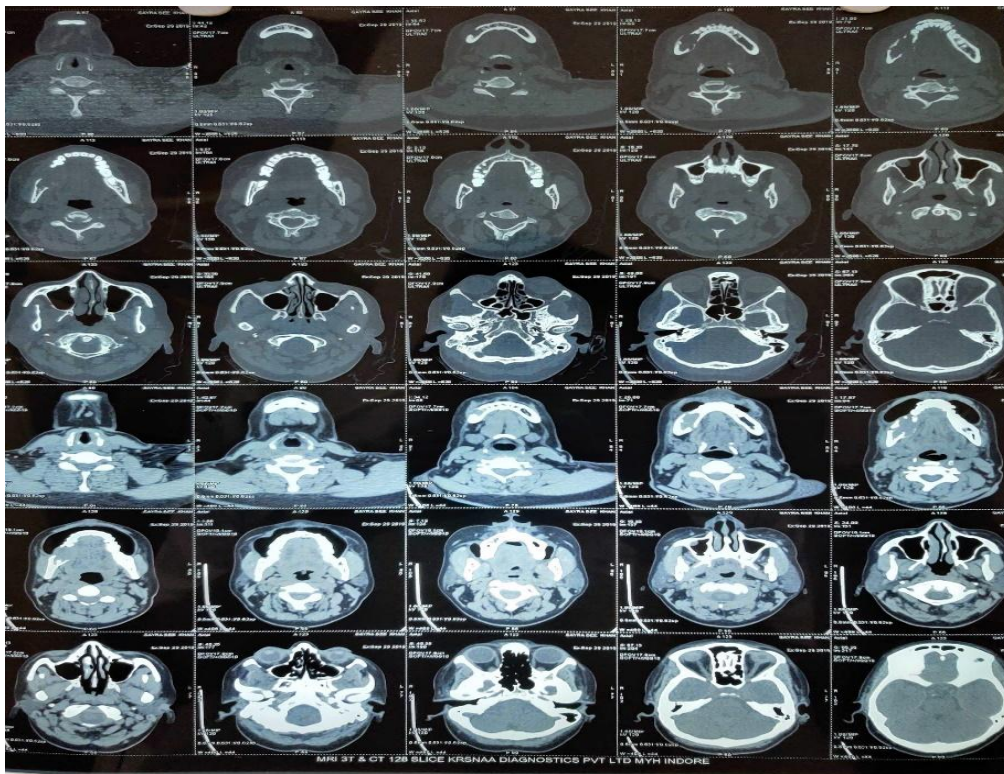
right lower back region of the jaw for 3week. (figure-1) The history of extraction was elicited with 46. The patient had noticed the swelling associated with pain which gradually increased. At the time of extraoral examination, the facial asymmetry was seen, the history of hypothyroidism under medication, no other relevant contributing family history. Intraoral examination revealed irregular large swelling extending from 46 to 48 molar regions and from the buccal vestibule to the floor of mouth approximately 4×4 cm. (figure-1) The swelling was firm, and tender on palpation, the mucosal surface was normal, there was the mobility of a tooth and displace buccally with 47. Physical examination revealed moderately built, blood pressure-170/90, pulse-78beat/min, respiratory rate-19breath/min, and the patient was afebrile. A provisional diagnosis of ameloblastoma and a differential diagnosis of odontogenic myxoma, CGCG were made.



(Figure-1) Intraoral image showing swelling and cortical expansion in a posterior molars region.

Radiographic Examination

Multidetector computed tomography (MDCT) and orthopantomogram (OPG) radiographic examination revealed an ill-defined multilocular radiolucent lesion measuring 33×20 mm with respect to 46,47,48 along with perforated, expansion, and thinning of the cortical bone. Complete resorption of root with 47 was seen. (Figure-2) The internal pattern shows wispy, ill-defined granular septa, some of which are oriented right angle to the periphery (Figure-3) which is a characteristic feature of CGCG.



(Figure-2) MDCT a radiographic image showing cortical perforation over the right side of the mandible



(Figure-3) Panoramic image showing a multilocular radiolucent lesion in molars areas.

Management

A biopsy was performed. Histopathological examination revealed with hematoxylin and Eosin (H and E) stained section shows loose fibrillar connective tissue stroma with proliferative fibroblast, numerous capillaries, multinucleated giant cell present through the connective tissue stroma, and the giant cells are varying in size. Based on radiological and histopathological findings, a diagnosis of CGCG was made. For preoperative management the prophylaxis treatment was

given, tab ceftriaxone 1gm 12 hourly, iv metrogyl 100 mg 8 hourly, iv pantoprazole 10 mg 8 hourly, dynaper 75 mg 10 hourly, ringer lactate, and normal saline every 2 hourly. The conservative treatment was performed in general anesthesia to excision the entire lesion with curettage and continuity of a mandible. On follow-up, the lesion was healed, and the patient was asymptomatic. This case report aims to present CGCG in an old patient in the posterior region of the mandibular jaw and treatment challenge.

DISCUSSION

CGCG was first described by Jaffe in 1953. In Indian biomedical literature, CGCG is seen in children and younger groups. In the present case, CGCG was involved in an old female patient.^[4] Although the swelling was painful and slowly growing, it is reported that painful cases are found in 5 to 11% of lesions. It is also noted that most cases are found below the 30-year age in the mandibular anterior region and often cross the midline and female to male ratio (2:1). Most cases are found during the routine radiographic examination, but the present case was reported with a complaint of pain and swelling. Clinically, the provisional diagnosis was made as ameloblastoma because the lesion was aggressive and painful and found in the molar's region. CGCG can associate with brown tumors to increases serum parathyroid hormone (PTH) and blood calcium level. The present case showed normal serum PTH and calcium levels to rule out brown tumors (hyperparathyroidism). Finally, radiological (MDCT, OPG) and histopathological report diagnosed as CGCG^[4,5] Generally the clinical diagnosis is not the definitive and final diagnosis. In most of cases, CGCG lesion is painless, slow-growing, and incidence in the general population is 0.0001%.^[6] Zhang et al. suggested an aggressive lesion has a high recurrence rate. Our case did not reveal any signs of recurrence after a one-year follow-up.^[7]

The systematic review of 232 CGCG published in English literature revealed an aggressive pattern of the clinical and radiological findings of the lesion. In most cases, radiographic findings involving an ill-defined border (66%), multilocular appearance (54%), cortical bone expansion (51%), displaced teeth and disfigurement (43%), and paresthesia (6%). The radiological findings of the present case were mostly similar to a systematic review and so were into consideration in diagnosis.^[8] The clinical findings of CGCG may range from asymptomatic to symptomatic nature. Choung et al. classified into aggressive (30%) and non-aggressive lesions (70%) of CGCG. The aggressive lesion is slow-growing, painful, showing displacement of the tooth, and disfigurement of the face. These findings are similar to our present case.^[9] In the treatment procedure, surgical curettage is still most commonly used in the management of CGCG lesions. The treatment is variable depending upon the size of the lesion, radiographic appearance, and location. So many authors suggest treatment options including calcitonin, interferon-alpha, intralesional corticosteroid injection. In the presented case best-suited treatment was excision with curettage.^[10]

CONCLUSION

CGCG is often seen in middle age group, but present case was age variation with aggressive nature. The diagnosis of this disease should take into consideration the aggressive nature of the CGCG, the patient's age, clinical symptoms, radiological imaging findings, and pathological features.

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