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CENTRAL GIANT CELL GRANULOMA ; A CASE REPORT

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ABSTRACT:. Central giant cell granuloma (CGCG) was classified as rarely aggressive idiopathic benign intraosseous lesion that occurs mostly exclusively in the jaws. It occurs most frequently in young women. It is usually slow growing and non neoplastic lesion which exhibits a spectrum of clinical behavior ranging from non aggressive to aggressive variants. The striking feature of this case is its aggressive nature and presence of this lesion in the anterior part of maxilla which considers being a rare finding as the lesion commonly occurs in the mandibular region anterior to first molar.

KEYWORDS: Central Giant cell granulomma, CGCG, Intraosseous, Aggressive , Anterior, Mandible, Maxilla

INTRODUCTION

The Central Giant Cell Granuloma (CGCG) occurs most commonly in children (or) in young adults and has a predilection for females[1]. It is more common in the anterior portion of the mandible and often crosses the midline. The clinical behavior of CGCG is variable. It ranges from slow growing asymptomatic to an aggressive lesion than manifesto itself with pain, root resorption and tendency to recur after excision[2,3].

The majority of giant cell granuloma of the jaws behaves in a more benign fashion. However some lesions despite an innocuous histological pattern, demonstrate an aggressive biologic behavior with a tendency to recur. Recurrent CGCG of the jaws have been designated as giant cell tumors because of their local aggressiveness, these lesions with locally aggressive behavior should be defined as aggressive giant cell granuloma of the mandible and the maxilla. It is a reactive intraosseous lesion of unknown etiology, most commonly occur as a single lesion. The occurrence of multiple lesions is unknown and it is mostly associated with Hyper Parathyroidism (or) Cherubism. Multiple giant cell lesions have been reported to be associated with conditions such as Ramon Syndrome and NFI[3,4,6].

It is non neoplastic lesion that is found exclusively in the maxilla and mandible, more than 60% of the cases occur in patients under 50years of age and approximately 65% of CGCGs are reported in women. The mandibular maxillary ratio has been reported as being from 2:1 (Kaffeet as) to 3:1 (Whitaker and Waldron)7.

Based on its clinical behavior, CGCG has been classified as[1,2,3,4,5]:

1. Non aggressive which is characterized by a slow almost asymptomatic – growth that does not perforate the cortical bone (or) induce root resorption. This variety has a low tendency to recur.

2. Aggressive which is characterized by pain, rapid growth, expansion and (or) perforation of the cortical bone, ridiculer resorption, and a high tendency to recur. There are no histological difference between the aggressive and the non aggressive varieties.

Multiple giant cell lesions have been reported to be associated with conditions such as Ramon Syndrome, Juffe Campanacci Syndrome, Noonam-Like Syndrome and NFI.

Histopathology: At microscopic level, CGCG is characterised by multi-nucleated giant cells in a background composed of mesenchymal cells in different shapes, from ovoid to spindle and vary in size from one case to another. The stroma may present as loosely arranged with edema (or) very cellular. In the older lesions, significant amount of fibrosin may be present. Deposition of hemosiderin and areas of erythvocytes extravasation (or) foci of newly formed bone may also be present.

Radiographic features: Unilocular (or) a multilocular radiolucent lesion. Early lesions are small, unilocular, and may be located at (or) near the apices of vital mandibular anterior teeth. In the larger lesions, loculations are often present and the cortical bone may be "egg shell" thin (or) perforated by the mass[8].

Treatment: The traditional treatment of CGCG of the jaws has been surgical excision either by curettage (or) enbloc resection, depending on the following factors[9,10]:

Aggressive versus Non-aggressive behavior, location, size and radiographic appearance. Therefore, the surgical approach is based on the clinical and radiographic characteristics of each case. Other treatment have included radiation and systemic injection of calcitonin.

In 1988, Jacoway et al reported a case of CGCG treated with intra-lesional injections of corticosteroids. The use of intral-esional steroids in the treatment of CGCG's of the jaw bones may be due to both

1. Inhibition of the extra cellular production of lysosomal proteases.
2. Steroidal apoptotic action on osteoclast like cells. Andersen and Colleagues documented a recurrence rate as high as 13% in a group of 32 patients with CGCG.

Intralesional steroid injections are effective but the drug is progressively more difficult to inject as the lesion resolves and it is not always effective. Occasionally, steroid injection seems to promote growth of the lesion. Calcitonin provides another alternative for CGCG. Calcitonin is produced by the C cells of the thyroid gland and inhibits osteoclast activity, thus lowering the serum calcium level and stimulates osteoblastic activity. Calcitonin induces almost immediate morphologic changes in these cells, inhibiting the membrane ruffling and motility required for bone resorption. Harris administered clacitonin to 4 patients with CGCG for 12 to 34 months. Three of 4 cases after 5yrs showed complete resolution of the lesion with no recurrence. The side effect with calcitonin can be troubling but are not severe. They are unusually mansear, dizziness, vomiting, headaches and diarrhea. It does not cross the placental barrier.

Case Report

A 8 Years old patient born to a healthy father and mother, was referred to the Department of Pedodontics, Government Dental college and hospital, Kadapa with a chief complaint of progressively enlarged swelling on the right side of the palate since 3 years. Patient gave the history that the swelling started as a small swelling, and increased gradually to present size. In the clinical examination, the swelling is 4 x 3 cm in size extends anteriorly from 11, 52, 53 to posteriorly up to the junction of the hard and soft palate. Laterally from 54, 55, 16 to

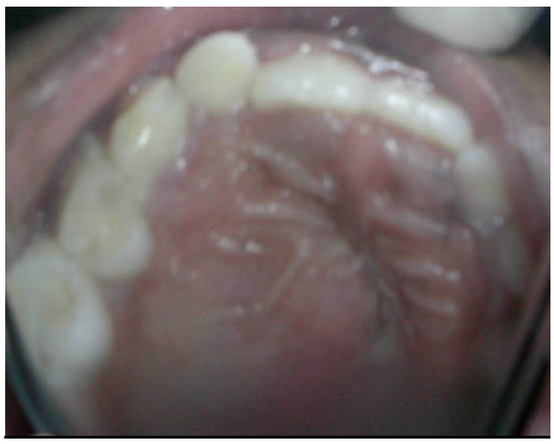

Fig.1. Intraoral Photograph showing the swelling in the palate

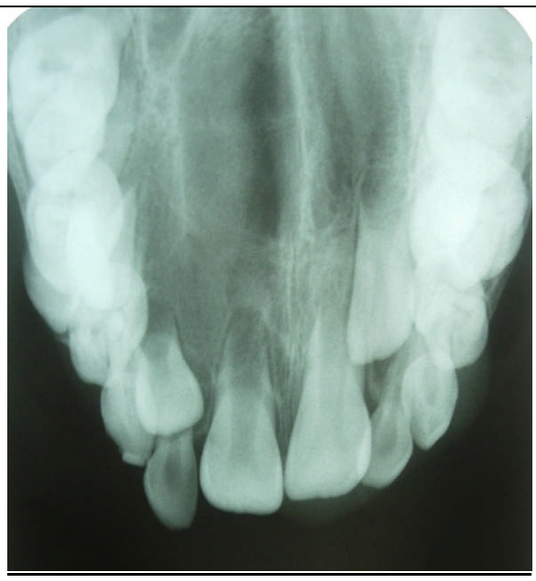

Fig. 2.Occlusal radiograph showing radiolucency with illdefined borders

medially upto mid-sagittal plane, the swelling extends to right side of the buccal vestibule causing mobility of 52,53,54,55. There are no inflammatory signs of the swelling. Mucosa over the swelling is normal in color.

Panoramic radiographs showed slight unilocular radiolucency of the anterior maxillary region extended to 11, 52, 53, 54, 55. Occlusal view showing a large diffused radiolucency with ill-defined borders. No apparent root resorption, displacement of unerupted 12. Trabeucular pattern is seen in certain areas which are not very clear.

The treatment consists of curettage of the bone. The surgical curettage is preferred for this patient.

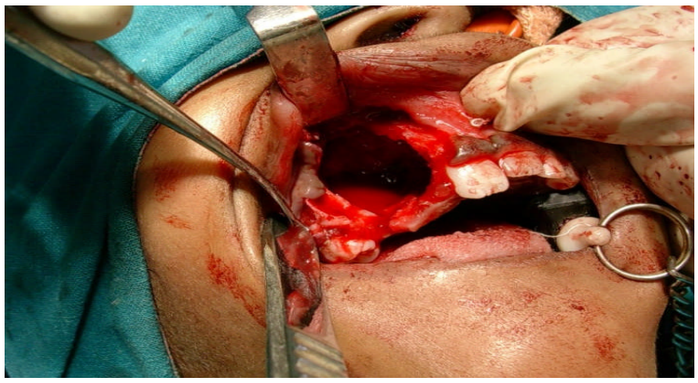

Fig.3. Surgical Curretage of the lesion

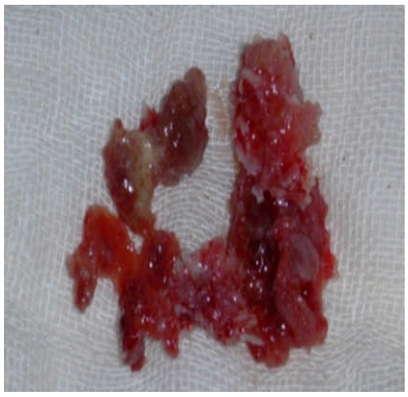

Fig. 4. Fragmented nature of the lesion

Section of soft tissue components show cellular lesion of fragmental nature, there are interlacing bundles of spindle cells and osteoclastic type of giant cells the giant cells are haphazardly distributed and contain amphophilic cytoplasm and 5-15 round to oval dense nuclei, spindle cells contain nuclei with laperity wavy outline. There is a focal edema and multiple focal collection of hemosiderin laden macrophages. The biopsy established the diagnosis of CGCG.

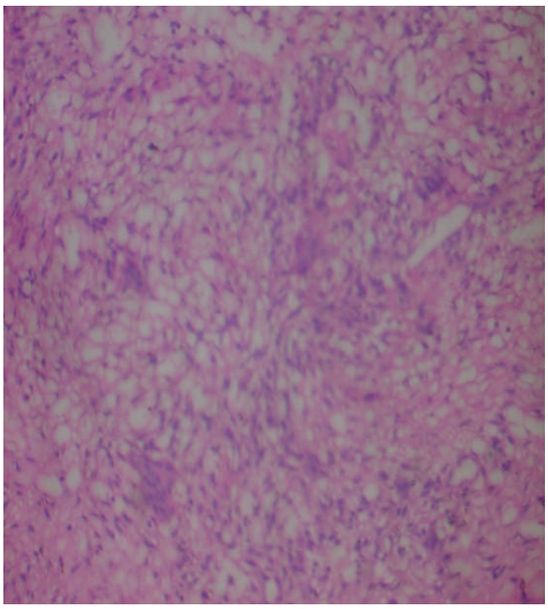

Fig.5. Biopsy specimen the giant cells being haphazardly distributed . There is a focal edema and multiple focal collection of hemosiderin laden macrophages

Discussion

Central giant cell granuloma is benign, probably reactive lesion of the jaws, facial bones and skull of unknown etiology. It is common in children and young adults and at least twice as common in females. It presents either as or chance radiographic finding, usually sharply defined radiolucency containing whisphy trabecular of bone or with mobility of teeth, bony expansion, or cortical perforation and soft tissue mass[11,12]. Lesion consisting small multi nucleate cells lying in a highly vascular stroma of mono nucleate giant cell pre cursors and fibroblasts. There are usually foci of giant cells in and around extravasated blood separated by fibrous septae containing osteoid or woven bone[13,14].

CONCLUSION

CGCG is a rare disease of head and neck, some time shows aggressive behavior and hence correct diagnosis is established. Surgery is the best and accepted treatment, but may be combined with local injection of steroids and calcitonin to avoid recurrence[15,16].

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