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CASE REPORT

DIPLOPIA IN THE MAXILLARY GIANT CELL GRANULOMA – AN UNUSUAL FINDING

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ABSTRACT

Diplopia is very rarely reported in giant cell granuloma of midface involving orbital floor. Thorough, ophthalmic examination should be performed in giant cell granuloma in midface region for diplopia to prevent further worsening & postoperative morbidity. Although, it is a benign disease process, it can also be locally destructive. Surgery is the traditional and still the most accepted treatment for giant cell granuloma. The case described here involved the maxilla which was treated with surgical curettage with a follow-up period of 1 year with no recurrence.

INTRODUCTION

Central giant cell granuloma is a benign lesion of jaws of unknown etiology. [1] Central giant cell granuloma was first described by Jaffe in 1953. It is a uncommon, benign and proliferateive non neoplastic process. The term central giant cell lesion has been proposed, as the microscopic features are not those of a true granulamatous process.[2]

The World Health Organization has defined it as an intraosseous lesion consisting of cellular fibrous tissue that contains multiple foci of hemorrhage, aggregations of multinucleated giant cells and occasionally trabeculae of woven bone.[1] Here we report a case of Central giant cell granuloma in maxilla.

A 16 year old male patient reported to the Department of Oral & Maxillofacial Surgery, with the complaint of swelling in the right upper jaw since 3-4 months. History revealed that the swelling started as small one and progressively increased to the present size over a period of 3-4 months. It was associated with intermittent pain. There was no history of trauma, neurological deficit, fever, loss of appetite, loss of weight.

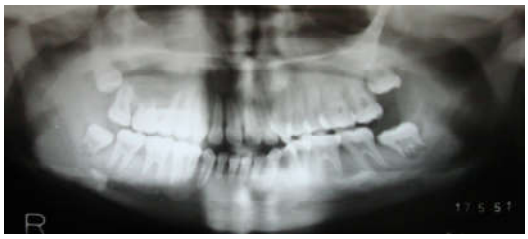

Fig1 Orthopantomogram showed a diffuse radiolucency involving right maxilla

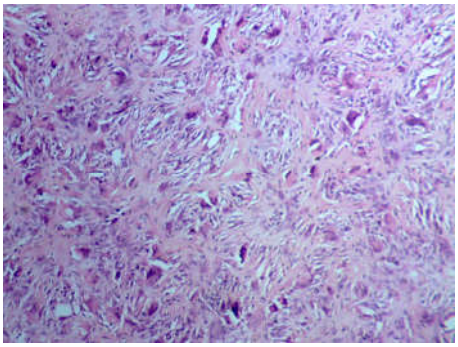

Fig2 H& E staining (10X)

There was no similar swelling present in any parts of the body. Patient was systemically healthy.

On extraoral examination a single, diffuse swelling was seen on the right side of the face in the anterior region of maxilla. The swelling measured about 5x5 cm. The surface of the swelling was smooth and extended from right ala of the nose anteriorly to 5cms from the tragus of the ear posteriorly (zygomatic buttress), superiorly from the infraorbital margin and inferiorly to the corner of the mouth (lateral aspect of nose). The swelling was firm in consistency, showed no secondary changes and was slightly tender on palpation.

Diplopia in upward gaze was present involving right eye indicative of inferior rectus involvement. HESS Charting was performed to confirm the same. Lymphadenopathy was absent.

Intra orally localized swelling was present on the right maxilla near the alveolar region. There was expansion of alveolar bone labially extending from labial frenum to 16 region posteriorly.

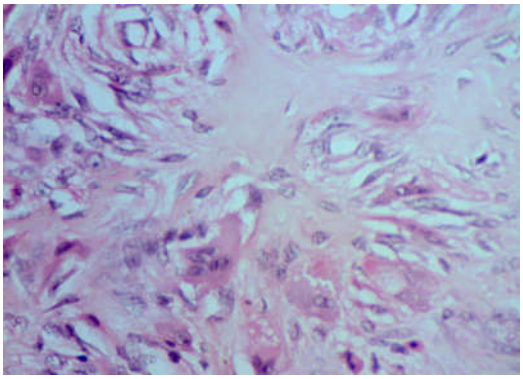

Fig3 H& E staining (40X)

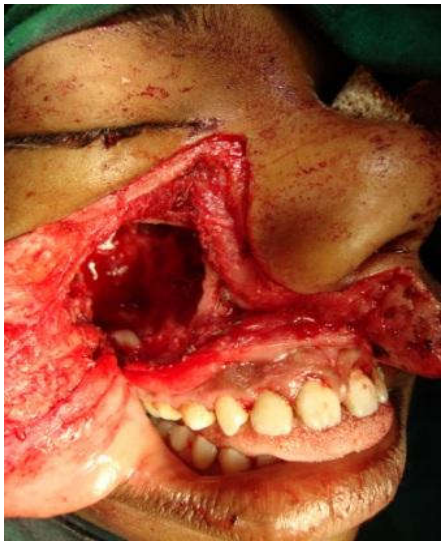

Fig4 Surgical site after excision of the lesion

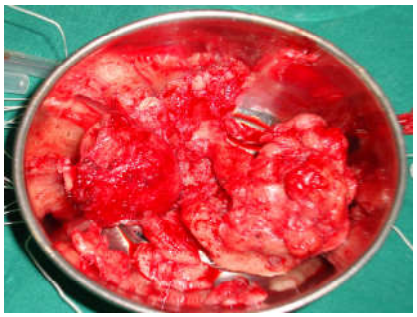

Fig5 Excised specimen

Palatally the swelling extended to midline of palate mediolaterally, antero-posteriorly from 11 to 16. The mucosa over the swelling was normal. There was obliteration of labial vestibule. 16 were found to be nonvital. Pathological teeth migration and spacing was also present. All third molars were partially erupted.

C.T. scan revealed a solid lesion in the right maxillary region involving the entire maxillary sinus with medial extension causing obliteration of the right nasal cavity. Superior extent involved the floor of orbit. Orthopantomogram showed a diffuse radiolucency involving right maxilla (fig.1). Routine hemogram and urine examination were normal.

Aspiration was negative. On the basis of clinical and radiological examination a provisional diagnosis of AOT was made. The serum chemistry of calcium, phosphorous, parathyroid hormone was normal, there by excluding the possibility of hyperthyroidism.

Histo-pathological examination of biopsied specimen revealed connective tissue made up of mature collagen fibers, fibroblasts and showing numerous multinucleate giant cells with foci of osseous structures (fig.2 and 3).The histological features were suggestive of Central giant cell granuloma.

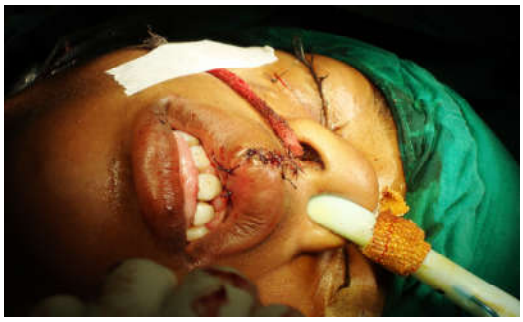

Fig6 Sutured surgical site

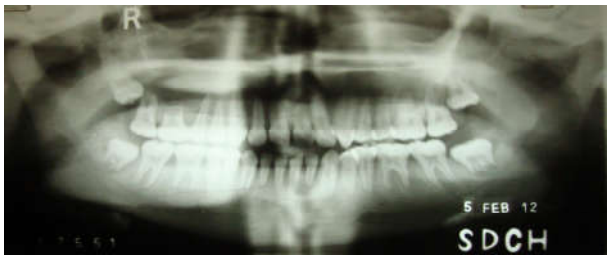

Fig7 Post-operative Orthopantomogram after 1 year

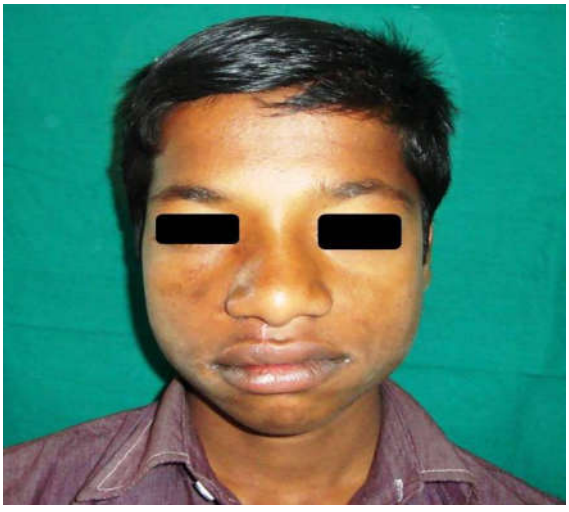

Fig 8 Post-operative photo after 1 year

The case was posted for surgery under GA. Weber-Fergusson incision was made to expose the tumor. Through the intraoral

approach the lesion was exposed labially (fig.4). Enucleation with curettage was done with the removal of small amount of bone surrounding the lesion peripherally. Perforation of floor of the orbit was present causing displacement of the eyeball. As the defect was small, no reconstruction was done (fig. 5 & 6).

Postoperatively, on examination the diplopia was completely corrected. No signs of recurrence were found in 1 year period of follow-up (fig 7 & 8).

DISCUSSION

Central giant cell granuloma is a non-neoplastic proliferative lesion of unknown etiology. It occurs most commonly in the mandible than in the maxilla. The present case, however, involved the maxilla. Most mandibular lesions occur anterior to first molars and often cross the midline. It strikingly occurs more commonly on the right than left side. Central giant cell granuloma also occurs in other bones of the facial skeleton and cranial vault. It rarely occurs outside the craniofacial bones, but it has been described in the short tubular bones of hands and feet. Giant cell granulomas of the jaw bones may be peripheral or central. Peripheral lesions present as pedunculated or sessile lesions on the gingiva while central lesions are endosteal. In most of the cases, females have more predilection than males with a 2:1 ratio. It occurs most commonly in children or young adults.[3] In young children, the craniofacial skeleton is actively developing to include osteogenesis, exfoliation and eruption of teeth. These processes cease in adulthood and may therefore predispose to CGCG formation in younger individuals.[4] Trauma has been considered as an important etiologic factor in the initiation of this lesion.[3]

The clinical behavior of the lesion varies from an asymptomatic osteolytic lesion that grows slowly without expansion, to an aggressive, painful process accompanied by root resorption, cortical bone destruction, and extension into the soft tissues. [4] Diplopia, a rare finding associated with central giant cell granuloma of maxilla was found in the present. As, diplopia may be the presenting symptom in SOFS, OAS or CSS. Orbital apex syndrome may be caused by inflammatory, infectious, neoplastic, iatrogenic/traumatic, or vascular processes.[5]

Central giant cell granuloma has been classified based on the clinical and radiographic features into 4:-

1. Aggressive lesion: Characterized by rapid growth, pain, expansion and / or proliferation of the cortical bone, root resorption and high recurrence rate.
2. Non-aggressive lesion: Characterized by slow growth that does not perforate the cortical bone or induce root resorption and has low recurrence rate.[6]

The radiological feature of CGCG described in the literature is variable ranging from multilocular to unilocular radiolucent lesions. The variability in the description of radiographic features in the literature is consistent with the nature of CGCG. CGCG is reported to have a low growth index; therefore, their borders appear to be distinct and non-diffuse.[1]

Surgery is the most accepted and traditional form of treatment. However, tissue removal ranges from simple curettage to bloc resection. Non-surgical treatment is good for slow growing lesions however successful treatment of large, rapidly growing lesions is still more likely to be achieved surgically.[7]

CONCLUSION

Giant cell granuloma is a rare disease of the head and neck region. It is a benign tumor but in some cases it is locally destructive. It most frequently affects the maxilla followed by the mandible. CT scanning remains the most useful imaging modality. Surgery is the most traditional and accepted method of treatment.

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