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Central Giant Cell Granuloma of Maxilla: A Case Report

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Abstract: Central giant cell granuloma (CGCG) is a benign intraosseous lesion of the jaws that is found predominantly in children and young adults. Although benign, it may be locally aggressive, causing extensive bone destruction, tooth displacement and root resorption. As it shares common common radiographic features with other lesion such as ameloblastoma, giant cell tumor , aneurismal bone cyst, hemangioma, a definitive diagnosis can only be made with histopathology. We present a unique case of central giant cell granuloma in a very young age female.
Keywords: Central giant cell granuloma (CGCG), Intraosseous lesion, Jaws.

INTRODUCTION

Central giant cell granuloma (CGCG) is a benign intraosseous lesion of the jaws. Jaffe H L in the year 1953 described for first as 'Central Giant Cell Reparative Granuloma' [1]. World Health Organization defines it as an intra- osseous lesion consisting of cellular fibrous tissue and contains many foci of haemorrhage, aggregations of multinucleated giant cells and occasionally trabeculae of woven bone [12]. It is considered as benign proliferation of fibroblasts and multinucleated giant cells that occurs almost exclusively within the jaws [2]. Though it is seen in age groups of 280 years, but 60% cases occur under the age of 30 years [3]. It is twice as frequent in females [13]. According to many studies, lesion aremore common in the anterior segments of the jaws, can even cross the midline. Occasionally present in the facial bones and small bones of hand and feet [2].

CGCGs can be aggressive or nonaggressive [4, 5]. The nonaggressive form may present with asymptomatic swelling or may be discovered accidentally during routine radiological investigations. The aggressive form of CGCG presents with pain, rapid growth, cortical perforation and root resorption [6].

CASE REPORT

The patient was 9 year old female with the history of swelling in right maxillary region (Fig. 1) since one year.

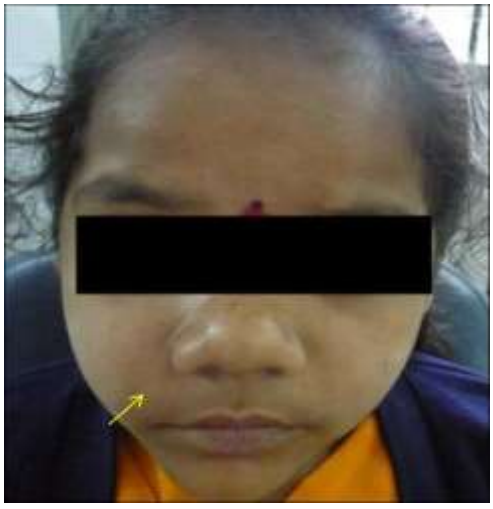

Fig. 1: Frontal view of a 9 year old female patient showing a diffuse swelling in right maxillary region with loss of right nasolabial fold

Intraoral examination (Fig. 2) demonstrated a tender right maxillary swelling approximately 1.5 X 1 cm in diameter with normal overlying mucosa.

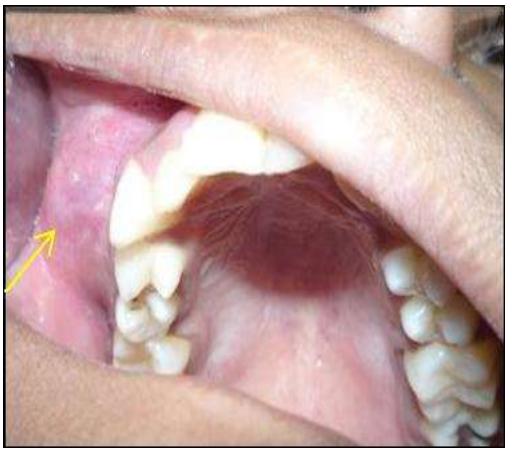

Fig. 2: Intra oral view of a 9 year old female patient showing a well defined palpable swelling in maxillary premolar region

Intraoral (Fig. 3 & 4) and panoramic (Fig. 5) radiographs revealed a well defined radiolucent multilocular lesion having thin septa in premolar region with displacement of premolar roots.

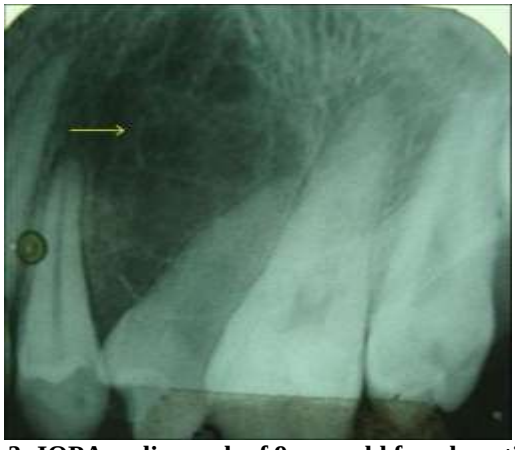

Fig. 3: IOPA radiograph of 9 year old female patient shows multilocular radiolucent lesion with displacement of premolar root

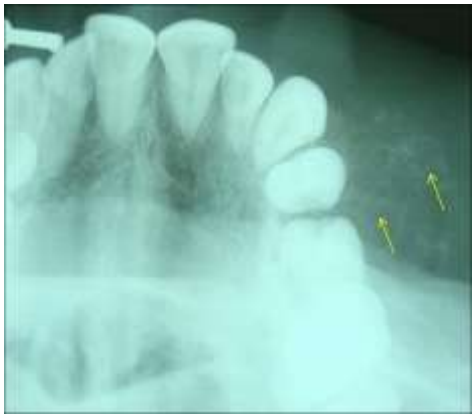

Fig. 4: Occlusal radiofraph of a 9 year old female patient shows multilocular radiolucent lesion with buccal cortex expansion

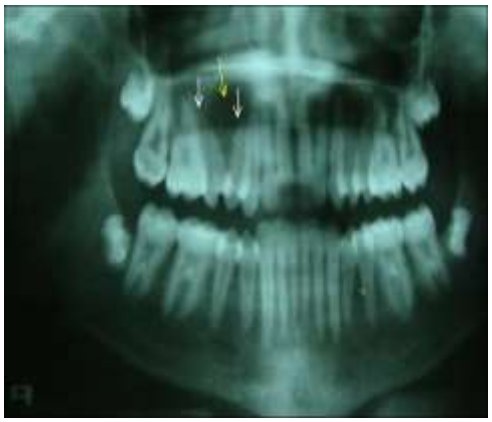

Fig. 5: OPG of a 9 year old female patient reveals a radiolucent lesion with diffuse margins & displacement of maxillary premolars roots

Axial and reconstructed computed tomography scan (Fig. 6 & 7) showed a well defined large multilocular expansile radiolucent lesion with erosion, cortical destruction and thinning of buccal cortex.

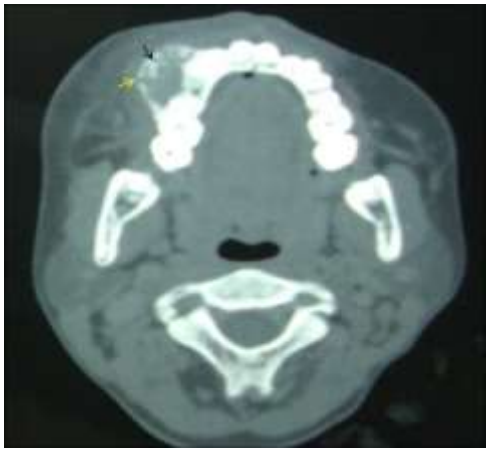

Fig. 6: Axial CT scan of a 9 year old female patient reveals a well defined multilocular lesion with thinning and perforation of buccal cortex

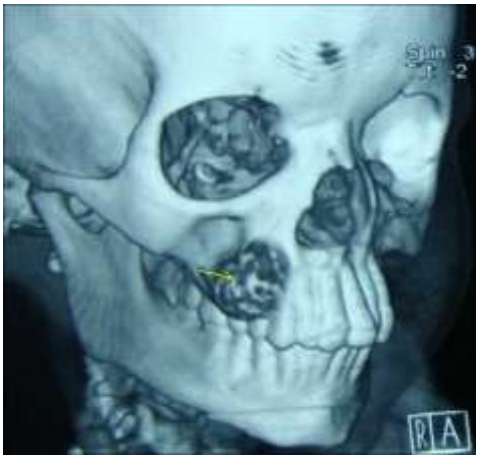

Fig. 7: Reconstructive 3D image of a 9 year old female patient reveals topographic view of lesion with buccal cortex expansion and perforation

The radiographic differential diagnosis was given as Ameloblastoma , aneurysmal bone cyst and hemangioma. Incisional biopsy (Fig. 8a & 8b) was taken for confirmation of diagnosis and management of lesion, which shows features of CGCG.

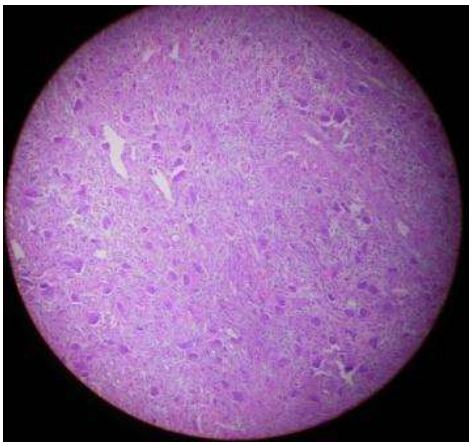

Fig. 8a: Photomicrograph showing giant cell…CGCG (H & E, X10)

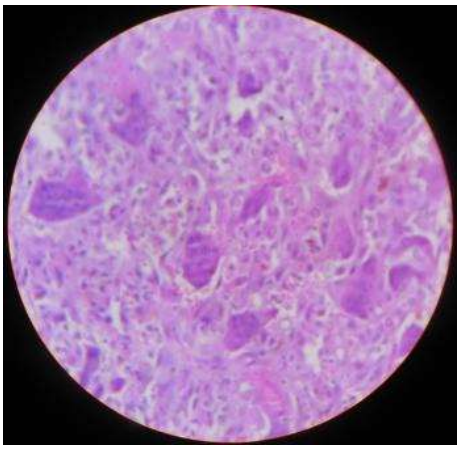

Fig. 8b: Photomicrograph showing giant cell…CGCG (H & E, X40)

Laboratory values for serum calcium, phosphorus, alkaline phosphates, and parathyroid hormone were within normal limits. Than the patient was refered to oral surgery where surgical resection of lesion was carried out. No recurrence of lesion was reported in 1year followup after surgery.

DISCUSSION

There are reports of CGCG behaving like a slow growing neoplasm: expansile and destructive, displacing teeth, enveloping and often eroding dental root ends, perforating the cortex and leading to pathologic fractures. When in themaxilla, CGCG can invade the floor of the maxillary sinus or the orbit, as well as the nasal fossae. Mandibular CGCG may expand and even penetrate the cortical bone. The majority of CGCGs (87.5%) present as an expansile radiolucency, either unilocular or multilocular, with well-defined or ill-defined margins [7-9].

Histologically, it is indistinguishable from other giant cell lesions of the bone like cherubism and aneurysmal bone cyst. It forms a lobulated mass of proliferative vascular connective tissue packed with giant cells that are seen lying in vascular stroma [10]. These giant cells have a patchy distribution and signs of bleeding into the mass and deposits of hemosidrin are frequently seen [11]. Ultra structurally the proliferating cells include spindle-shaped fibroblasts, myofibroblasts and inflammatory mononuclear cells [10].

CONCLUSION

CGCG is one of the common lesion in jaw bones. Final diagnosis of CGCG can only be confirmed with a histopathplogical examination. Radiographically may mimic aneurismal bone cyst, ameloblastoma and hemangioma. But for the proper management CGCG confirmed diagnosis is necessary.

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