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Central giant cell granuloma of anterior mandible: A case report

Dr. Anjana Singh[1], Dr.Rahul Srivastava[2] , Dr.Vishal Mehrotra[3] and Dr. Saman Ishrat[4]

[1]*PG Student, Department of Oral Medicine and Radiology, Rama Dental College, Hospital and Research Centre*

[2]*Reader, Department of Oral Medicine and Radiology, Rama Dental College, Hospital and Research Centre*

[3]*Prof & HOD, Department of Oral Medicine and Radiology, Rama Dental College, Hospital and Research Centre*

[4]*Senior Lecturer, Department of Oral Medicine and Radiology, Rama Dental College, Hospital and Research Centre*

Abstract

Central giant cell granuloma (CGCG) is an uncommon, benign, and proliferative disorder of the jaw, considered widely to be a non neoplastic. This lesion accounts for <7% of all benign tumors. The actual etiology of CGCG is still unclear, although inflammation, hemorrhage, and local trauma have all been considered. The incidence in the general population is very low, and patients affected are generally younger than 30 years. Here, we report a case of CGCG in a 30 years old female patient.

Keywords: Benign, Jaw, mandible, tumor

Introduction

Jaffe in 1953 first explained Central giant cell granuloma (CGCG). [1] It is a rare, benign and proliferative non neoplastic process. The term central giant cell lesion has been proposed, as the microscopic features are not those of a true granulomatous disorder.[2,3] Central giant cell granuloma is a locally reparative reaction of bone, which can be possibly due to either an inflammatory response, hemorrhage or local trauma.[1,4] Females are affected more frequently than males. Most lesions occur in the molar and premolar area, some of these extending up to the ascending ramus.4The lesions varies from a slow growing painless swelling to a rapidly aggressive growth that presents with pain, cortical perforation, root displacement or root resorption.[5] Radiographic findings may present with small apical lesions to large multilocular lesions with varying degree of expansion. Histopathologically CGCG is characterized by presence of numerous multinucleated giant cells in a prominent fibrous stroma. [5]

Case Report

A 30 years old female patient reported to the Department of Oral Medicine and Radiology with a chief complaint of swelling in lower front region of teeth since 1 year. The swelling started as small size and progressively increased to the present size over a period of one year. Upon extra oral examination no abnormality detected. Intraoral examination revealed a solitary normal mucosal colour oval growth, with well demarcated margins, measuring 4x2cm in diameter, was present in the lingual aspect of front mandibular alveolar ridge extending from mesial aspect of 32 to the mesial aspect of 43 and extending supero-inferiorly from the incisal edge the teeth with 31-44 to lower depth of floor of mouth. On palpation the lesion was firm in consistency, and non tender. Based on clinical history, and intraoral findings provisional diagnosis of central giant cell granuloma of anterior mandible was made, with a differential diagnosis of irritaional fibroma, peripheral giant cell granuloma, keratocystic odontogenic tumour. Orthopantomogram shows large multilocular illdefined radiolucency, with soap bubble appearance in the lower front region of the mandible, extending anteriorly from the root apex of the tooth with respect to 35 till posteriorly to the mesial aspect of 46. Resoption of 44 root apex with cortical thinning at anterior border of mandible was present. Routine blood hemogram was done and all values were within normal limits. An incisional biopsy was performed and histopathological examination revealed connective tissue made up of mature collagen fibres, fibroblasts and showing numerous multinucleate giant cells with foci of osseous structures. Thus a final diagnosis of central giant cell granuloma was given. The patient was further advised for surgical treatment, which he was not willing for.

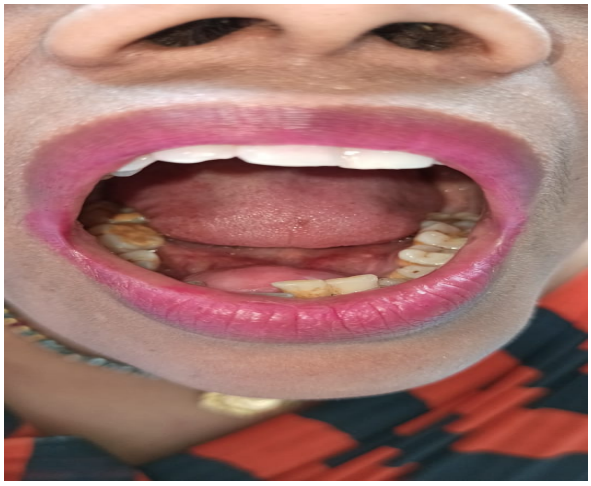

Figure 1: Intraoral growth present at right front side of lingual vestibule irt 31 to 44.

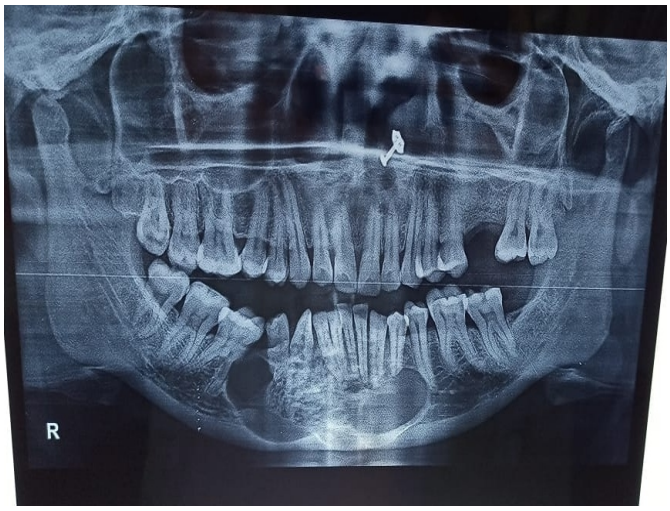

Figure 2: orthopantomogram shows multilocular radiolucencies in the right front side of jaw.

Discussion

Central giant cell granuloma is a benign tumor of unknown etiology, belonging to a group of giant cell tumors and tumor like which is still poorly defined.[5] Central giant cell granuloma was classified as a true neoplasm and a reactive proliferative process because of its histological feature, dynamic biologic, characteristics and variable clinical pattern.[4]

The incidence of CGCG in the general population is estimated to be 0.0001% with 60% of cases occurring before the age of 30. Gender predilection reports are variable, but the majority of them occur in females with a female: male ratio 2:1.6 CGCG is more prevalent in the anterior than the posterior jaws, often crossing the midline (50%), and the mandible is more commonly affected than the maxilla and confined to the tooth bearing areas of the jaws.[6,7]

In the present case, the anterior mandible was affected which was non tender similar to the cases reported in the literature where in most of the cases, the lesion presents as a painless, slow growing swelling of the jaw. Intraorally, swelling with sometime bluish brown discoloration can be observed. Most common complaint is paresthesia, and displacement of teeth which frequently leads to malocclusion and swelling results in facial asymmetry and difficulty in mastication.[6] Radio graphically, the CGCG commonly presents as a solitary radiolucency with a multilocular appearance or, less commonly, a unilocular appearance. Lesions develop twice as often in the mandible with an epicentre anterior to the first molar in young patients, and there is tendency for the epicentre to occur in the posterior aspect of the jaws after the first two decades of life. In the maxilla, the epicenter is more commonly anterior to the canine. The borders may be well-defined or ill-defined and show variable expansion and destruction of the cortical plates. The internal structure may show granular pattern of calcification which is organized into ill-defined, wispy septa which emanate at right angles to the periphery of the lesion, displacement and resorption of teeth are also evident.[6,7] The present case exhibited multilocular radiolucencies with coarse faint septa, thining of cortical plate, root displacement, and cortical plate expansion. CGCG should be differentiated from odontogenic keratocyst (OKC), unicystic ameloblastoma, and aneurismal bone cyst. Two major histological features are diagnostic in CGCG, which is highly cellular, fibroblastic stroma with plump, spindle shaped cells with high mitotic rate. The multinucleated giant cells are irregularly distributed and are prominent throughout the fibroblastic stroma. Histological, the features of CGCG are indistinguishable from brown tumor of hyperparathyroidism and giant cell lesions, but biochemical tests such as serum calcium, phosphorus, and alkaline phosphatise can be taken into consideration to rule out these lesions.[8,9] The treatment of the CGCG ranges from curettage to resection. Surgical treatment such as simple curettage, curettage with peripheral ostectomy, enucleation, and *en bloc* resection can be carried out. Aggressive lesions should be corrected and treated with curettage. [10]

Conclusion

CGCGs are benign, but occasionally they can be aggressive lesions developing in the jaws. Although

simple curettage is effective in treatment for the majority of CGCG of the jaws, but aggressive lesions should be treated by surgical resection along with curettage. Use of INF-α and intraregional corticosteroid therapy are the latest therapeutic approaches available at this time. Further studies should be encouraged to clarify the etiopathogenesis of the disease and various treatment modalities and also to create awareness among our professional colleagues

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