Case Report

Central Giant Cell Granuloma Of Mandible: A Case Report

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ABSTRACT

Central giant cell granuloma (CGCG) is a benign intraosseous osteolytic tumor of the jaws with an unknown etiology. This lesion accounts for <7% of all benign jaw tumors. It has been reported that this lesion is diagnosed during the first two decades of life in and 60% of cases are evident before the age of 30. It is considerably more common in the mandible than in the maxilla. Clinically and radiologically, there are two variants, aggressive and non-aggressive. Histologically this lesion consists of cellular fibrotic tissue with multinucleated giant cells, multiple foci of hemorrhage and trabecules of woven bone. Here we reporting a case report of 17 year old male patient with central giant cell granuloma.

Key Words: Giant cells Tumor, Intraosseous Lesion, Mandible,Giant cells

Introduction

Central giant cell granuloma (CGCG) was first described by Jaffe in 1953.[1] It is an uncommon, 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 process.[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.[4]The lesions varies from a slow growing painless swelling to a rapidly aggressive lesion that presents with pain, cortical perforation, root displacement or root resorption.[5] Radiographic findings are ranging from small apical lesions to large multilocular lesions with varying degree of expansion.[5] Histopathologically CGCG is characterized by presence of numerous multinucleated giant cells in a prominent fibrous stroma.[4,5]

Case Report

A 17 Years male patient reported to the Department of Oral Medicine and Radiology, with a chief complaint of swelling in relation to right lower half of the face since 1 month. [Figure-1] The swelling has gradually increased to the present size. Patient also gives a history of an intraoral growth in relation to lower right back tooth region since 20 days. The growth preceded the extraoral swelling, the intraoral growth started 2months back and the pain appeared 20days ago. The growth has started as pea size from the 43 region and extended to 45 region gradually. The patient also gives a history of intermittent bleeding from the growth, mostly at the times of brushing and mastication. The patient also complains dull localized intermittent pain in relation to the intraoral growth. Intraoral examination revealed a growth arising from the marginal and attached gingiva is seen irt 43 to 45 region.[Figure-2] The growth is approximate 2x2 cm in size and extends superiorly inferiorly from marginal gingival of 43 to 45 to the depth of lingual vestibule. Mesiodistally the growth extends from mesial aspect of 43 to distal aspect of 45 lingually involving marginal and attached gingival .The growth appears to be detached from lingual surface of 43 to 45 and surface appears to be smooth and mucosa erythematous in colour . On palpation the growth is soft to firm, tender on palpation, bleeds on probing and can be detected from lingual surface of 43 to 45.

An orthopantomograph revels an unilocular well defined radiolucency seen extending from the mesial aspect of 41 to the mesial root of 46 with displacement of roots of 45.[Figure-3] Based on the clinical and radiographic features a provisional diagnosis central giant cell granuloma irt to 43 to 45was given, with a differential diagnosis of Keratocystic Odontogenic tumour , Malignancy arising from the gingiva. Routine blood hemogram was done and all values were within normal limits. An incisional biopsy was performed and histo-pathological 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.

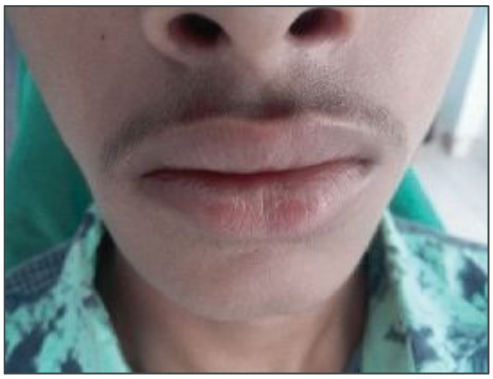

Figure-1 : Extra oral swelling on right side of face

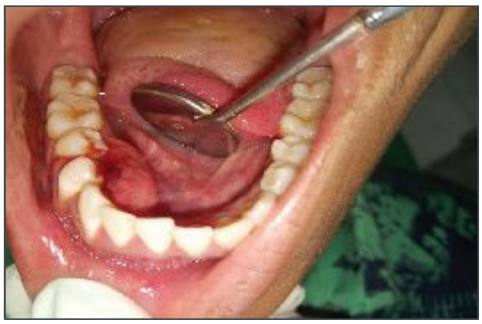

Figure -2 : Intraoral growth present at right side of lingual vestibule i.r.t 43 to45

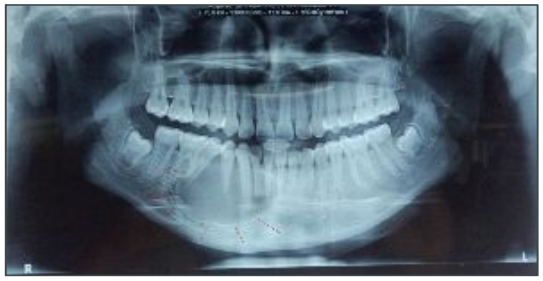

Figure -3: OPG shows unilocular radiolucency in right side of jaw

Discussion

Central Giant Cell granuloma is a benign tumor of unknown etiology, belonging to a group of giant cell tumors and tumors-like which is still poorly defined.[5] CGCG was classified as a true neoplasm and a reactive proliferative process because of its histologic features, dynamic biologic characteristics, and variable clinical patterns.[4] CGCG is an intra osseous lesion which occurs predominantly in younger adults under 30 years of age.[2,3] Mandible is affected more frequently than maxilla mostly in anterior region. Sometimes the lesion crosses the midline. Females are affected more frequently than males. Aggressive lesions are rapidly growing, painful and produce cortical perforation with root resorption.[2,3,4] It may be discovered accidentally during routine radiographic examination or in presence of signs of facial asymmetry, loosening or displacement of teeth and difficulty in mastication. Palpation reveals a rubbery, elastic sensation where the bone is thin. The lesions develop without paresthesia. Associated tooth may become mobile but remain vital.[5]

The CGCG may occur initially as a unilocular, cystlike radiolucency, but as it grows larger, it frequently develops an architecture that causes a soap-bubble type of multilocular radiolucency.[5,6] This mul-tilocular soap-bubble appearance is associated with a later presentation, and is one of the common radio-graphic patterns seen in patients with CGCG.[6] The Diagnosis of CGCG is usually made histologically from an incisional biopsy. CGCG is composed of uniform fibroblasts in a stroma containing various amounts of collagen.[6]

It appears typical with multinucleated giant cells throughout the lesion but often focal around areas of hemorrhage unlike the giant cell tumor of long bones, where the giant cells are more evenly distributed. There is a spindle cell matrix with possible areas of hemorrhage.[7]

In patients with CGCG several alter-natives medicinal therapy to surgery are being suggested. a)Intralesional injections of an aqueous solution of triamcinolone with either 2% lidocaine or bupivacaine, 50% mixture by volume are used. The solution is administered with a 5-cm disposable syringe, delivering a dose of 30 mg in adults and 25 mg in children. The site of injection is gauged by clinically estimating the site where cortical bone is more expanded and thinnest and once inside the lesion, small amounts are injected into different areas. These injections are repeated every 3 weeks and the treatment is limited when there is a significant amount of resistance caused by the bone being formed and calcified.[6] b)100 IU of calci-tonin (salmon or human) per day, subcutaneously till it is ascertained radiographically that there is no further resolution of the disease.[6] c) Interferon alpha-2a or interferon alpha-2b is started 48 to 72 hours postoperatively at a dose of 2,000,000 - 3,000,000 units/ m2 administered once daily subcutaneously. During treatment, patients are evaluated for IFN side effects, including fever, flu-like symptoms, lethargy, postnasal drip, skin rash, and hair loss. Haematocrit, haemoglobin, white blood cell and platelet counts, and liver function tests are obtained every 6 weeks and the primary tumor site is monitored by clinical examination and radiography.[6]

Surgical curettage has been relied upon as the treatment of choice for CGCGs. Nonaggressive lesions in the jaws respond to simple curettage but aggressive lesions have reported recurrence rates from 11 to as high as 70% after enucleation or curettage. Therefore, for more aggressive lesions, sur-gical therapy alone may not suffice. In these cases, curettage has been combined with adjunctive therapies comprising of peripheral osteotomy, cryotherapy with liquid nitrogen, use of Carnoy's solution, radio-therapy.[6]

Conclusion

The central giant cell granuloma (CGCG) is a benign, non- neoplastic lesion of the jaws, is a less frequent pathology in daily dental practice. The clinical behavior of central giant cell granuloma is quite variable and difficult to predict. Hence the need of rigorous diagnosis approach based on meticulous history taking, careful clinical and radiological examinations, targeted biological assessment and anatomopathological analysis may help to reach final diagnosis and better treatment.

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