

Giant Cell Granuloma: A Case Report

*Pankaj Bansal, **Virender Singh, ***S.C.Anand

*Lecturer, Dept. of Oral and Maxillofacial Surgery, Sudha Rustagi College of Dental Science & Research Kheri More, Village Bhopani, Faridabad, Haryana, ** Reader, Head Dept. of Oral Surgery, Govt Dental College (Rohtak), ***Professor & Ex-Principal, Govt Dental College (Rohtak)

Abstract

Central giant cell granuloma is a benign lesion which almost exclusively manifests in maxillofacial region. Usual site is anterior mandibular region. Radiographic features of this lesion closely resemble ameloblastoma and hyperparathyroidism. It is difficult to differentiate its histopathologic picture from that of hyperparathyroidism without co-relating clinically. This is a case report of central giant cell granuloma in body region of mandible along with its management and discussion (in literature).

Giant cell lesions of the jaw comprises of an interesting and controversial group.¹ Among these giant cell granuloma is commonly encountered lesion. Any swelling which is not painful, gradually increasing in size and vascular in appearance raises the possibility of presence of giant cell granuloma. The case of peripheral as well as central giant cell granulomas are extensively well documented in literature², and has been confirmed that 99% of giant cell tumor in jaws are giant cell granuloma. As it was presumed that it is an aftermath of trauma reparative word was frequently used (initially). In recent years term reparative has been deleted from original name given by Jaffe³ as it was found that lesion is basically destructive in nature rather than reparative.

Case Presentation

A 30 years old Indian female was referred to Oral & Maxillofacial Surgery Department for evaluation of swelling of size approximately 3.5x2.5 cm present in right mandibular region extending from right canine to 2nd molar, which was present since last 7 months and gradually increasing in size (Fig. 1).

Reprint requests: Dr. Pankaj Bansal

House no -363, Sector 19

Faridabad-121002

E-mail- pankajbansal363@gmail.com



Fig: 1 (Extra oral pre-operative photograph)

On examination it was non-inflammatory in nature, hard in consistency involving both cortices. Swelling was localized, well defined, non tender with no associated paresthesia. First and second right molars were missing and premolars were slightly drifted. No other significant medical history was found except that patient was anaemic and seemingly undernourished.

Roentgenographic examination showed multilocular radiolucency with intervening septa's and well defined periphery (Fig. 2). FNAC suggested absence of any malignant change in lesion. Aspiration ruled out any cystic lesion.



FIG: 2

Axial section of CT scan of lesion

Differential diagnosis consist of (a) ameloblastoma (b) giant cell granuloma (c) hyperparathyroidism (d) myxoma.

Possibility of hyperparathyroidism was ruled out by insignificant medical history, normal range of serum calcium and alkaline phosphatase level. Also, roentgenographically interocular septa's were not straight (a characteristic of myxoma). More than usual bleeding during biopsy procedure increased suspicion of giant cell granuloma.

Histopathologic examination confirmed diagnosis of central giant cell granuloma with characteristic presentation of multinucleated giant cells, in loose fibrillar connective tissue and hemosiderin pigment foci present in between.

Treatment was done by segmental resection of involved part along with 1 cm of radiographically normal margin (Fig. 3,4). Frozen section from periphery was checked for absence of infiltrations. Primary reconstruction was done with the help of iliac crest grafting (Fig. 5,6).

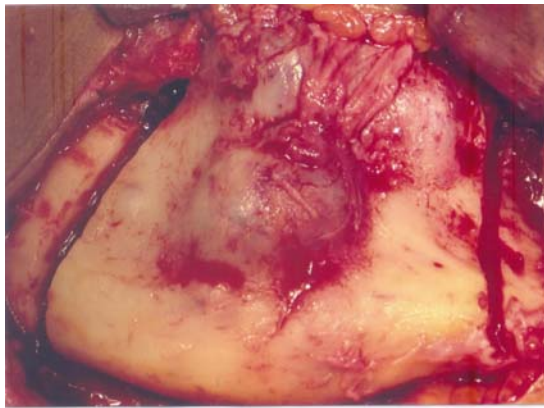


FIG: 3

Intra-operative (while resection)



FIG:4

Resected segment

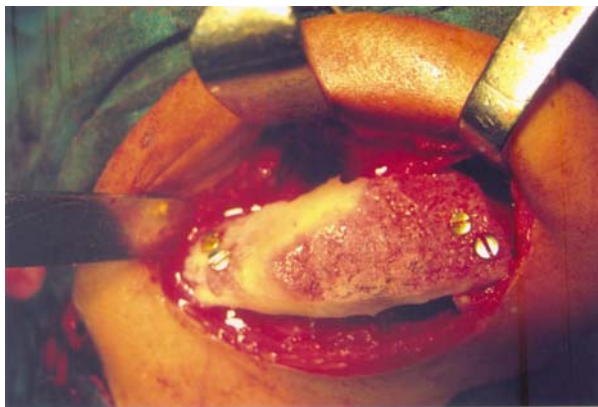


FIG:5

Iliac crest in position (at continuity defect)

Discussion

In recent years there has been great controversy regarding different lesions containing multinucleated giant cells. Variety of jaw lesions both malignant and benign contain multinucleated giant cells. Malignant one like osteogenic sarcoma, fibrosarcoma, fibrous histiocytoma,



Fig: 6 (Post-operative extra-oral photograph)

malignant cell tumor and benign one includes fibrous dysplasia ossifying fibroma, aneurismal bone cyst.⁴

Confusion regarding diagnosis was com-

pounded by recognition of fact that hyperparathyroidism lesion histopathology is very similar to central giant cell granuloma. Distinction between giant cell tumor and giant cell granuloma is far from clear. Dron and Shafer concluded that they are probably same with one malignant variety. Bhaskar⁵ also felt that they are histologically indistinct, however Abrams and Shear⁶ said that there is significant morphologic difference between two. Lucas pointed out giant cell tumor have longer giant cells.

It is of general agreement that peripheral giant cell granuloma is much more common than central giant cell granuloma (5:1) and females are effected frequently (2:1) in comparison to men.

Mandible is commonly affected bone (2:1) with anterior segment most common to bear the brunt.⁷ Pain is not a prominent feature but bulging of cortices is present. Age is below 30.

Histopathology was described by Jaffe as giant cell lesion composed of fairly loose vascular stroma and small spindle shaped cells with hemorrhagic extravasation in between hemorrhagic extravasation. Austin and Royer⁸ described bony stromal cells as elongated. It was remarked relative paucity and irregular distribution of giant cells in collagenous tissue.

Roentgenographically central giant cell granuloma is a destructive lesion with radiolucent area, ragged and sometimes smooth borders, sometimes showing fine trabeculae. Cortical plates are thin and expanded.

Traditionally treatment is done by curettage, cryosurgery and excision. Hutler⁹ reported 67% cases treated by surgery alone and only 58% by curettage only. Bradley¹⁰ treated some of the lesions by conservative surgery and cryosurgery. Marconi¹¹ et al series included 25 cases of giant cell tumor treated with curettage plus cryosurgery using liquid nitrogen.

Currently central giant cell granulomas are

being treated successfully with curettage or surgery with isolated reports, where segmental resection with a margin of normal bone was done. John Webb¹² has described treatment of aggressive giant cell granuloma of mandible by combined curettage and cryosurgery.

Recurrence may be treated by repeat curettage. Percentage of recurrence is very low if surrounding area is cauterized.

References

1. Laskin (Daniel M Laskin). CV Mosby Company. 2002; 2: 570-84.
2. Shafer's WG, Hine MK, Levy BM. A textbook of Oral pathology 4th ed. WB Saunder's, Philadelphia. 1983; 146.
3. Jaffe HL., Giant cell reparative granuloma, traumatic bone cyst and fibrous dysplasia of jawbones. Oral Surg. 1953; 6: 149.
4. Robert C, Leonard BK, Harry K, Antonio PA. Central giant cell lesions of jaw: A clinicopathologic study. J Oral Max Surg. 1966; 708-13.
5. Bhaskar SN, Bernier JL, Grooley F. Aneurysmal bone cyst and other giant cell lesions of jaws: report of 104 cases. J Oral Surg. 1959; 17: 30-41.
6. Abrams B, Shear M. A histologic comparison of giant cells in central giant cell granuloma of the jaws and the giant cell tumor of long bone. J Oral Path. 1974; 3: 217-23.
7. Waldron CA, Shafer WY. The central giant cell reparative granuloma of the jaw: an analysis of 38 cases. Am J Clin Path. 1966; 45: 437-47.
8. Austin LT, Dahlin DC, Royer RD. Giant cell reparative granuloma and related conditions effecting jaw bone. Oral Surg. 1959; 12: 1285-95.
9. Hutler RVP, Worcester JB, Francis KC. Benign and malignant giant cell tumor: A clinicopathologic analysis of natural history of disease. Cancer. 1962; 15: 653.
10. Bradley PF, Fisher AD. The cryosurgery of bone. An experimental and clinical assessment. Br J Oral Surg. 1975; 13: 111-27.
11. Marconi RC, Lyden JP, Hunos AG. Giant cell tumor treated by cryosurgery. A report of 25 cases. J Bone Joint Surg. 1973; 55A: 1633-44.
12. John Webb, James Brockbank. Combined curettage and Cryosurgical treatment for the aggressive "giant cell lesion" of the mandible. Int J Oral Maxillofacial Surg. 1986; 15: 780-85.