CASE REPORT

GIANT CELL GRANULOMA OF THE MAXILLA

Usman Haider Uzbek, Iram Mushtaq
Oral and Maxillofacial Unit, Department of Dentistry, Ayub Medical College, Abbottabad.

The case report is of a 30 year old male, who complained of a slowly expanding swelling in the maxilla in the left premolar region. The swelling was clinically and radiographically diagnosed as Central Giant Cell Granuloma. The patient also had Angles Class2 Division 2 Malocclusion in which repeated micro trauma may have possibly contributed to the formation of the tumor. The tumor was surgically removed under general anesthesia followed by local injections of corticosteroids.

Keywords: Giant cell granuloma,Maxilla,Benign Lesion, Surgical Excision, Corticosteroid Injection, Unusual Etiology

INTRODUCTION

Giant Cell Granuloma is a rare bony lesion in the Head and Neck region. It is a non-odontogenic tumor never seen in any other bone of the skeleton. It most commonly affects maxilla followed by the mandible. Although benign, it can locally be destructive. Surgery is the most accepted method of treating the condition. The case history reported here presented with a giant cell lesion that involved the left maxilla. The lesion was surgically excised followed by local injections of corticosteroids.

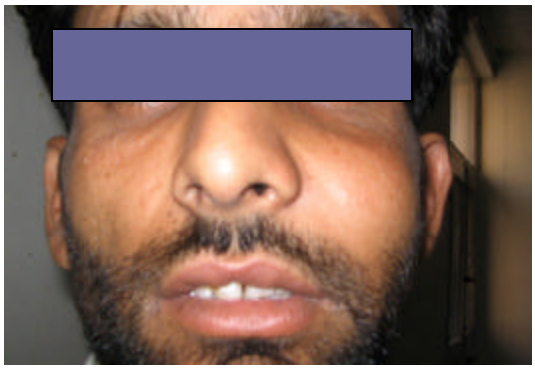

Figure 1- Swelling of the left cheek due to the underlying lesion

CASE REPORT

A 30 year old man was referred to the Oral & Maxillofacial Unit of Ayub Medical College & Teaching Hospital, after complaining and seeking treatment for a painless and gradual swelling in his left maxilla. After 10 months and taking various courses of medication for the condition in the pretense of it being due to a tooth infection he was referred from a primary care hospital to our tertiary care hospital.

Symptoms that were noted a few weeks before his admission were swelling in the left upper cheek, left upper gum and acute maxillary sinus infection, which due to the treatment with antibiotics led to improvement in the sinus infection.

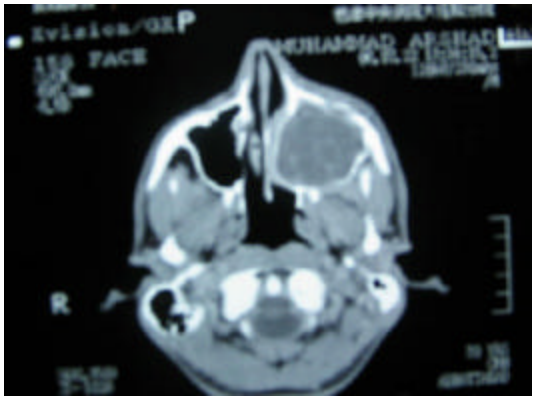

Figure-2: CT scan. The mass involving anterior part of maxilla and alveolar ridge

Intra-oral examination showed a purple, expansive mass in the region of upper left 4-5-6 teeth. There was also expansion of the palate. The teeth showed grade 1 mobility. The patient's facial profile also showed Class 2, division 2 mal-occlusion. An orthopantomogram (OPG) and a computed tomography scan (CT) revealed a soft tissue mass seen completely obliterating the left maxillary antrum with thinning and destruction of parts of the wall. The mass extended inferiorly into the body of the maxilla upto alveolus, involving the teeth. Infero-medially, it reached the midline of the maxilla. Medially, it almost obliterated the posterior third of the left nasal cavity. Posteriorly it reached the lateral and medial pterygoid plates. Superiorly it extended up to the floor of the orbit. Two separate histopathological examinations confirmed Central Giant Cell Granuloma.

All therapeutic options including partial maxillectomy were discussed with two other teams of maxillofacial units in other parts of the country. Partial maxillectomy was carried out through a gingival sulcus approach. Entire tumoral mass was removed along with portions of invaded bone and corresponding teeth. A careful and thorough curettage of the residual bone cavity was performed.

Histological examination of the specimen showed multinucleated giant cells and a background showing spindle cells. Surgical treatment was followed by consecutive weekly local injections of corticosteroids for a period of 4 weeks which were well tolerated by the patient.

At present, 16 months after surgery, the patient is still being monitored by clinical and radiological assessment and so far has not shown any signs of recurrence.

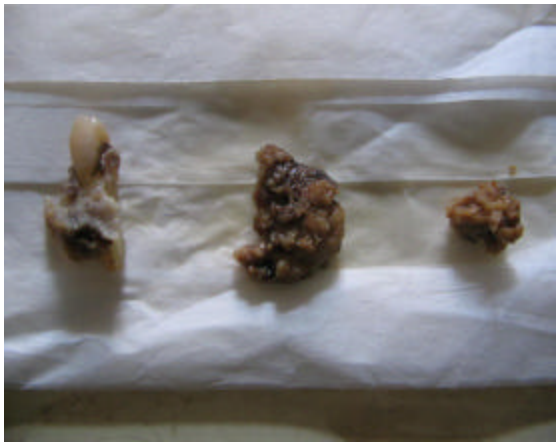

Figure-3: Parts of tumoral mass

DISCUSSION

Central Giant Cell Granuloma is a rare disease.[1] It can occur at any age but presents most frequently in the 2nd and 3rd decades and involves the maxilla more than the mandible.[2] It is twice as frequent in females.[3] 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.[4] Frequently it is only a painless swelling, but growth in some cases is so rapid and the mass can also rarely erode through bone particularly of the alveolar ridge to produce a soft tissue swelling.[3] Although lesion is expansive and invasive, it does not usually involve perineural sheets, for this reason parasthesia is usually not observed in these patients.[5] Despite the fact that the course of the disease is considered benign, there still exist some reports in literature where metastasis has been observed.[6] Furthermore malignant transformations to osteosarcoma or fibrosarcoma have been reported.[7]

Waldron [8], Shafer [9] described the lesion as a reactive response of bone to repeated unidentified trauma; hence it is believed that Class 2 Division 2 malocclusion could have caused the condition due to repeated micro trauma.[8,9] It has also been suggested that it could be a reaction to some form of hemodynamic disturbance in bone marrow perhaps associated with trauma and hemorrhage. [2]

Some cases are symptomless and are first detected on routine radiographical examinations.[2] Radiographs show a rounded cyst-like radiolucent area, often faintly loculated or with a soap bubble appearence.[3]

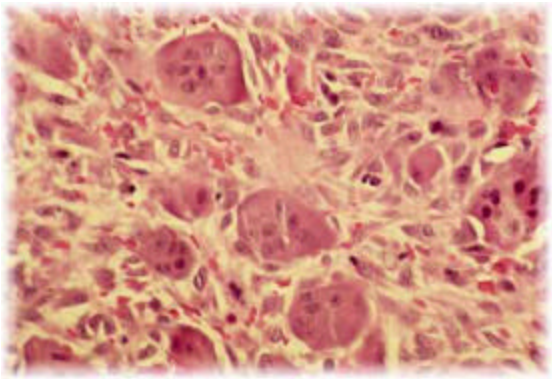

Figure-4: Histological Examination shows multinucleated giant cells and spindle cells which have oval and fusiform nuclei.

Histologically, it is indistinguishable from other giant cell lesions of the bone like cherubism and aneurysmal bone cyst.[2] Giant cell granuloma forms a lobulated mass of proliferative vascular connective tissue packed with giant cells. These giant cells are seen lying in vascular stroma.[2] These giant cells have a patchy distribution and signs of bleeding into the mass and deposits of hemosidrin are frequently seen.[3] Ultra structurally the proliferating cells include spindle-shaped fibroblasts, myofibroblasts and inflammatory mononuclear cells.[10] Sparse strands of collagen fibers partly subdivide the lesion which may contain a few trabeculae of osteoid or bone.[2]

Surgery is the most accepted and traditional form of treatment. However, tissue removal ranges from simple curettage to bloc resection.[11] Radiation therapy in such a case is contraindicated.[9] There have been cases reported in which radiation treated lesions have undergone malignant transformation.[12]

Incidence of recurrence after surgery is 4-20%,whereas locally aggressive Giant cell lesions have a higher recurrence rate and it usually occurs due to incomplete removal of the tumor. [2, 13]

Several surgical techniques have been proposed for removal of more aggressive central Giant cell granuloma and for an aggressive lesion that shows rapid growth and facial swelling, bloc resection and suitable reconstruction of the affected area is considered to be the most appropriate approach.[14]

Non-surgical approaches to avoid disfigurement after surgery have been used, including daily systemic doses of Calcitonin and intralesional injection with corticosteroids.[11] Some central giant cell granulomas can be sterilized thermally using laser or cryoprobe.[13] Weekly intralesional injections with corticosteroids have reported successful results in literature.[15] Corticosteroids, however are contraindicated in certain conditions like diabetes mellitus, peptic ulcer and immuno-compromised state.[3] 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.[3]

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 maxiila followed by the mandible. Surgery is the most traditional and accepted method of treatment.

REFERENCES

1. Khafif A, Krempl G, Medina JE. Treatment of giant cell granuloma of the maxilla with intralesional injection of steroids. Head Neck 2000; 22(8):822-5.
2. Soames JV, Southam JC, Oral Pathology, 3rd edn, Oxford University Press; 1998. p.312-131.
3. Cawson RA, Odell EW, Cawson's Essentials of Oral Medicine and Pathology, 7th ed, Churchill Livingstone; 2002. p.135-136.
4. Kramer IRH, Pindborg JJ, Shear M. Histological typing of odontogenic tumors. 2nd ed Berlin: Springer-Verlag; 1991.
5. Fechner RE, Stacey EM editors. Atlas of tumor pathology; tumors of the bones and joints. Armed Forces Institute Pathology; 1993. p. 181-2.
6. Small GS, Rowe NH: A "true giant cell tumor" in the mandible. J Oral Surg 1975;33:296-301.
7. Thompson SH, Bischoff P, Bender S : Central giant cell granuloma of the mandible. J Oral Maxillofac Surg 1983;41(11):743-46.
8. Waldron CA, Shafer WG: The central giant cell reparative granuloma of the jaws. Am J Clin Pathol. 1966; 45(4):437-47.
9. Shafer WG, Hine MK, Levy BM, Editor. A Text Book of Oralpathology. Igaku-Shoin: WB Saunders Company; 1983. p 146-149.
10. Rosai J. Ackerman's surgical pathology. 8th ed. St. Louis MO: CV Mosby Co; 1996.
11. Bataineh AB, Al-Khateeb T. Rawashdeh MA. The surgical treatment of central giant cell granuloma of the mandible, J Oral Maxillofac Surg. 2002; 60(7):756-61.
12. Smith PG, Marrogi AJ, Delfino JJ. Multifocal central giant cell lesions of the maxillofacial skeleton: a case report. J Oral Maxillofac Surg. 1990;48(3): 300-5
13. Whitaker SB, Waldron CA. Central giant cell lesions of the jaws.A clinical, radiologic and histopathologic study. Oral Surg Oral Med Oral Pathol. 1993;75(2):199-208.
14. Choung R, Kaban LB, Kozakewich H, Perez-Atayde A. Central giant cell lesions of the jaws: a clinicopathologic study. J Oral Maxillofac Surg. 1986; 44(9):708-13.
15. Rajeevan NS, Soumithran CS. Intralesional corticosteroid injection for central giant cell granuloma. A case report. Int J Oral Maxillofac Surg 1998; 27(4): 303-4.

Address for Correspondence: Dr. Iram Mushtaq, Head of Oral and Maxillofacial Unit, Ayub Medical College and Teaching Hospital, Abbottabad.
E-mail: driram_abbas@yahoo.com