Giant Cell Reparative Granuloma in the Maxilla and Mandibula

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Case Report

Giant cell reparative granuloma is a disease with an unknown etiology, characterized by benign locally aggressive lesions invading mandible and maxilla in the head and neck region. These lesions usually present as a mass and cause deformities at bony structures. The use of various medical and surgical procedures in the treatment of the disease with its rare occurrence makes these lesions interesting. In this case report we present a 47 years old female patient who had a painful swelling in the left lower left jaw and oral cavity since 8 months. After her complaints proceeded despite medical therapy, she has been operated and pathology report confirmed a giant cell reparative granuloma. We also discuss differential diagnosis and the achievements in treatment procedures.

Key Words: Giant cell reparative granuloma, partial maxillectomy, hemimandibulectomy

Abstract

Giant cell reparative granuloma is a disease with an unknown etiology, which is thought to induce the formation of a reactive process, such as inflammation or trauma.

Introduction

Giant cell reparative granuloma (GCRG) is a lesion with unknown etiology, which is thought to induce the formation of a reactive process in the head and neck region. These lesions usually present as a mass and cause deformities at bony structures. The use of various medical and surgical procedures in the treatment of the disease with its rare occurrence makes these lesions interesting. In this case report we present a 47 years old female patient who had a painful swelling in the left lower left jaw and oral cavity since 8 months. After her complaints proceeded despite medical therapy, she has been operated and pathology report confirmed a giant cell reparative granuloma. We also discuss differential diagnosis and the achievements in treatment procedures.

Key Words: Giant cell reparative granuloma, partial maxillectomy, hemimandibulectomy

Case Presentation

In this report, information about a patient has been presented with an informed consent form obtained from the patient. A 47-year-old female patient without any medical history of chronic disease was admitted to our clinic with the complaint of not being able to use a dental prosthesis. She was first admitted to an oral and dental health center 2 years ago and had been exposed to a 3-dimensional computed tomography evaluation, which had revealed masses leading to expansile, lytic, and cortical resorption in the left anterior and also posterior mandibular body and an expansile lesion with a heterogeneous appearance at the level of the apex of premolar teeth in the maxillary dental alveolus (Figure 1a). It had been observed that the widest part of the lesion was 3.7x2.4x3.2 cm in the mandibular, and it had included septation and loculations inside (Figure 1b). In the maxilla, it had been found that it had extended across the left nasal passage base and maxillary sinus base and reached a size of 2.4x1.8x1.7 cm at its widest point (Figure 1c). After incisional biopsy, the patient had been diagnosed with central giant cell granuloma and was recommended for follow-up.

The physical examination of the patient, performed when she was admitted to our clinic, revealed swelling in the left mandibula and maxilla, extending from the anterior to molar region. It was covered with smooth-surface mucosa and painless on palpation. Considering the previous examination results and the size of the lesion, total surgical excision of the lesion was planned. After the lesion was excised through hemimandibulectomy and partial maxillectomy, the mandibula was reconstructed with a free iliac bone graft and titanium plaque. She was discharged on the 7th postoperative day. In the pathological examination, macro-
scopic evaluation showed that the size of the lesion was 5x3.8x3 cm in the mandible and 3x2.5x1.7 cm in the maxilla. In the microscopic evaluation, a lesion that included fusiform cell proliferation areas with focal giant cells in conjunctive stroma was surrounded by bone spicules displaying osteoblastic activity and was consistent with central giant cell granuloma was detected (Figure 2a, b). In order to evaluate the location of the lesion and the inserted graft and plaque, computed tomography was performed in the postoperative 1st month, and it was found that the location of the lesion was clean and that the titanium plaque was in place (Figure 3).

Discussion

Giant cell reparative granuloma is a rarely seen benign, hyperplastic, reactive lesion of oral mucosa. Its etiology includes local irritation of the periost and periodontal ligament, such as plaque, tartar, chronic infection, chronic irritation, tooth extraction, dental prostheses, and misapplied dental fillings (4). It is more common in females. It usually appears in the mandible and maxilla and sometimes displays a locally aggressive course (1-3). It is histologically defined as a non-encapsulated mass, including fibroblastic fusiform cells, multinuclear giant cells, and extravasated erythrocyte clusters. Microscopically, it is seen as multinucleate giant cells in conjunctive stroma. In light of the literature, it can be suggested that fusiform cells, endothelial cells, phagocytes, and osteoblasts contribute to giant cell proliferation (5, 6). The histological appearance of GCRG can be confused with hyperparathyroidism, Brown tumor, fibrous dysplasia, cherubism, aneurysmal bone cyst, and Paget’s disease of bone (7).

Moreover, while diagnosing, the age of the patient, serum calcium and phosphorus levels, and radiological and histological features of the lesion should be taken into consideration. The size of GCRG generally ranges from 0.5 cm to 1.5 cm (4). A 5-cm lesion is a rarely seen situation. However, in our case, the size of
the lesion was 5x3.8x3 cm in the mandibula and 3x2.5x1.7 cm in the maxilla. When GCRGs reach an adequate size, deformity of bone cortex, displacement of teeth, and facial asymmetry become more apparent. Small lesions appear unilocular, but as the lesion gets bigger, it becomes septated multilocular.

The most commonly accepted method for the treatment of giant cell reparative granuloma is surgery with a wide range, from simple curettage to block resection. The recurrence rate of incompletely excised lesions is 4%-20% (2). Calcitonin and intralesional steroid are given daily as medical treatment (1-3). Recent studies suggest that surgical operation is more efficient after subcutaneous interferon alpha treatment (1). Treatment with the osteoclast inhibitor osteoprotogenin is another therapeutic method (1). Radiotherapy is not preferred, because it causes the benign lesion to transform into a malignant lesion (2). Moreover, some giant cell granulomas can be sterilized with cryotherapy and laser (2). For the case in our study, considering the size of the lesion, medical treatment was not preferred. The lesion, which expanded in the maxilla and mandibula, was excised through hemimandibulectomy and maxillectomy, and then, reconstruction was provided by free iliac bone graft and titanium plaque.

**Conclusion**

Simple curettage can be performed for small lesions, but total surgical excision and reconstruction are required for bigger lesions causing cosmetic deformities, as in our case.

**Informed Consent:** Written informed consent was obtained from patient who participated in this study.

**Peer-review:** Externally peer-reviewed.


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**References**