CENTRAL GIANT CELL GRANULOMA OF THE MANDIBLE: A RARE PRESENTATION

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Abstract

Central giant cell granuloma (CGCG) is an intra-osseous lesion consisting of cellular fibrosis tissue containing multiple foci of hemorrhage, multinucleated giant cells and trabecules of woven bone.¹ This lesion accounts for less than 7% of all benign jaw tumours.² Jaffe³ considered it as a locally reparative reaction of bone, which can be possibly due to either an inflammatory response, hemorrhage or local trauma. Females are affected more frequently than males. It occurs over a wide age range.⁴ It has been reported that this lesion is diagnosed during the first two decades of life in approximately 48% of cases, and 60% of cases are evident before the age of 30. It is considerably more common in the mandible than in the maxilla. Most lesions occur in the molar and premolar area, some of these extending up to the ascending ramus.

The presence of giant cell granuloma in the mandibular body area, the entire ramus, condyle and coronoid represents a therapeutic challenge for the oral and maxillofacial surgeons. The aim of this report is to describe an unusual presentation of central giant cell granuloma involving the mandibular body, ramus, condylar and coronoid processes, and to discuss the differentiated diagnosis, the radiographic presentation and the management of this lesion.

Keywords: giant cell granuloma, mandible, histopathological examination, resection, primary reconstruction.

CASE REPORT

A 23 year-old woman from the remote village of Uttrakhand state reported to the Department of Oral and Maxillofacial Surgery at the Government Dental College, Rohtak, with a painless swelling involving the left side pre-auricular and mandibular region, having appeared approximately 6 months ago. The patient had difficulty in speech and chewing, as the cheek was crushed in the interocclusal space on the left side. Clinical examination revealed large swelling, diffused, non-tender, with ill-defined margins, non-fluctuant and non-compressible, restricting the mandibular movements. (Fig. I)

Occlusion was disturbed as swelling had pushed the maxillary posterior teeth palatally. A panoramic radiography exhibited a well-defined mixed radio-opaque, radio-lucent lesion extending from the left premolar region to the condylar head. (Fig. II)
Based on historical, clinical and radiologic findings, a differential diagnosis of ameloblastoma, Pindborg’s tumor, true giant cell lesion, odontogenic keratocyst was established. Biopsy was planned and performed for histopathological examination. This gave the impression of giant cell granuloma.

A coronal computer tomography revealed an expansile, well-defined lesion, occupying the body, ramus, condyle and coronoid process. Multiple perforations were noted beyond the ossified thin borders of the lesion. Axial CT revealed an intrabone lesion with cortical expansion on the lingual and buccal sides. (Fig. III)

On the basis of histopathological and radiological findings, a diagnosis of aggressive central giant cell granuloma was established. Surgical resection of the left side mandible with disarticulation was planned. Under general anesthesia, the mandible was approached by lip split and submandibular incision.

The lesion was resected with disarticulation on the left side. (Fig. IV) Primary reconstruction was done with a titanium reconstruction plate with condylar part. (Fig. V) Finally, histopathological examination confirmed the final diagnosis of central giant cell granuloma. The patient is on follow up, but no clinical or radiographic signs of recurrence are evident.

**DISCUSSION**

The central giant cell granuloma appears as a painless expansile mass. The clinical behaviour of the central giant cell granuloma ranges from a slowly growing asymptomatic swelling to an aggressive lesion causing pain, local bone destruction, root resorption or displacement of
In the here presented case, the female patient was conscious about her facial asymmetry due to the painless, gradually increasing swelling on the left side of the mandible. The case presented in this article conforms to the reported site, sex, age and jaw. This lesion usually occurs in patients younger than 30 years, being more common in females than males, and more frequent in the mandible than in the maxilla. The lesion has been reported as confined to the tooth bearing area of the jaws, being more common in the anterior portion of the mandibular body.

The radiologic features of giant cell granuloma have not been clearly defined, the lesion may appear as an either unilocular or multilocular radiolucency with well-defined or ill-defined margins with varying degrees of expansion of the cortical plates. Radiographic appearance of the lesion is not pathognomonic and may be confused with that of many other lesions of the jaws.

Various methods have been described for the treatment of central giant cell granuloma of the jaws. Curettage alone or in combination with resection with or without continuity loss is the treatment most frequently used. Some investigators has reported successful treatment, using intra-lesional injections of corticosteroids. As corticosteroids inhibit osteoclasts in narrow cultures, under conditions of bone absorption by increased apoptosis, their use for giant cell granuloma has been advocated. Biophosphonates have been used to treat giant cell lesions and fibrous dysplasia in children, because of their inhibiting action of osteoclastic bone resorption. The management methods are extremely various, ranging from simple enucleation to radicle resection. The surgical treatment is modified according to the anatomic location, size of lesion, clinical behaviour, periosteal or nerve involvement. However, in this case, perforation of the cortical plates prompted us for surgical resection and primary reconstruction with titanium plates.

The present case report, describing a central giant cell granuloma of the mandible involving the body ramus condyle and cornoid processes, is rare and can be a diagnostic challenge for both oral and maxillo-facial surgeons.

References