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Case Report

Peripheral Giant Cell Granuloma of the Maxilla: Report of a Rare Case

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Abstract

Peripheral giant cell granuloma is a benign, rare tumor of non-odontogenic origin in the oral cavity. The soft tissue lesions are frequently denominated as 'giant cell epulis' and never correspond to true neoplasia. It occurs due to inflammatory reactions secondary to chronic trauma or local irritation of the soft tissues. Normally, such rare cases of peripheral giant cell lesions can be misdiagnosed as any other pathologies. So the proper diagnosis correlating clinical, radiologic and histopathologic examination is important for the management of such lesion thus eliminating potential risk to adjacent hard tissues. This case report presents a case of 60 year old female who was reported in the department of Oral and Maxillofacial Surgery with the chief complaints of swelling in the right maxilla since 5 months. After excisional biopsy and histopathological study, the lesion was finally diagnosed as peripheral giant cell granuloma, which is a rare lesion at the oral cavity and present at an unusual location. No recurrence of the lesion was noted at 6 months follow-up after the surgical management.

Keywords: *Giant Cell Granuloma; Giant Cell Epulis; Trauma; Maxilla Excisional Biopsy*

Abbreviations

PGCG: Peripheral Giant Cell Granuloma

Introduction

Peripheral giant cell granuloma (PGCG) is a non-odontogenic, tumor-like reactive lesion accounting 7% of all benign lesions of the jaw. It is also called as giant cell epulis, osteoclastoma or peripheral giant cell reparative granuloma. These hyperplasic giant cell lesion are not true neoplasm but rather occurs in response to local irritation such as chronic trauma, tooth extraction, ill fitting dentures, etc. But the real etiological factors are still unknown [1,2]. This rare reactive lesion can arises either from the mucoperiosteum or periodontal ligaments associated with tooth in the oral cavity. Some pathologists believe that it may represent a soft tissue counterpart of the central giant cell granuloma, which is a bony lesion, because of the close microscopic resemblance of both [3]. PGCG is more frequently reported in women than in men, with slightly higher prevalence in the 30 - 70 year old group [1]. It is exclusively a soft tissue lesion, which appears in oral cavity as variable sized, sessile or pedunculated lesion which is usually bluish red mostly occurs in the mandibular jaw [4]. Since it resemblance with many other common pathological lesions of the jaw, the final diagnosis however relies on histopathological diagnosis which shows multinucleated giant cells. This article reports a rare case of peripheral giant cell granuloma at the maxillary region in a 60 year old female patient. Lesion was completely excised. And there is no recurrence noted after 6 months follow up.

Case Report

A 60 year old female patient reported to the department of oral and maxillofacial surgery with chief complaint of swelling in relation to right side of the face since 5 months. History revealed that the swelling started as a small one and progressively increased to the present size over a period of 5 months. It was not associated with any pain. Also, patient had reported to private practitioner 5 months back

with complaint of loose upper denture which she was wearing nearly for 4 years. Following that, the clinician had removed the removable partial denture and also extracted the abutment teeth associated with it. Patient had no medical history and there was no similar swelling present in any other part of the body. On extra oral examination, a diffuse swelling was seen on the right side of face in the anterior region of maxilla, measuring 3 x 4 cm. On palpation, swelling was firm in consistency (Figure 1). Intraorally on inspection, swelling was 4 x 3 cm seen in edentulous region distal to 21 to medial of 17. Buccally extends till vestibular depth and palatally till midline. The lesion was sessile, irregular surface and the overlying mucus membrane was intact (Figure 2). On palpation the lesion was firm and tender with tendency to bleed. Lesional aspiration shows few drops of blood. Orthopantomogram reveals soft tissue shadow involving right maxillary edentulous region distal to 21 to mesial of 17, without any bony involvement. Right maxillary sinus floor was intact (Figure 3). The case was provisionally diagnosed as peripheral giant cell granuloma. Differential diagnosis was made as ameloblastoma, odontogenic myxoma, ameloblastic fibroma. Treatment plan included surgical excision of the lesion which was performed under general anesthesia after routine lab investigations. The overlying mucosa was incised and undermined. Lesion was separated from the adjacent tissue in toto (Figure 4) and primary closure was done with 3-0 silk suture. The specimen was sent for histopathologic diagnosis. Sutures were removed after 1 week. Wound healing was uneventful. Final diagnosis was made based on histopathological examination which exhibits widely distributed multinucleated giant cells with stromal components exhibits spindle shaped cells intervened by fibrous septae. Vascular elements are seen throughout the area. There is no evidence of recurrence till 6 months of follow-up.

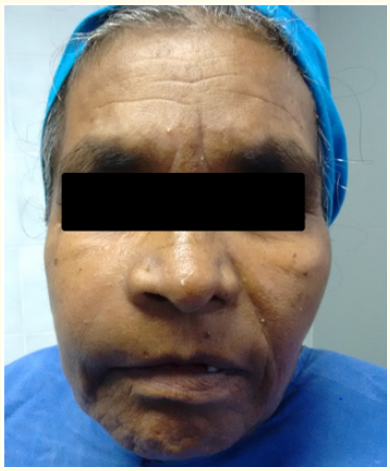

Figure 1: *Pre-operative extraoral view of the swelling.*

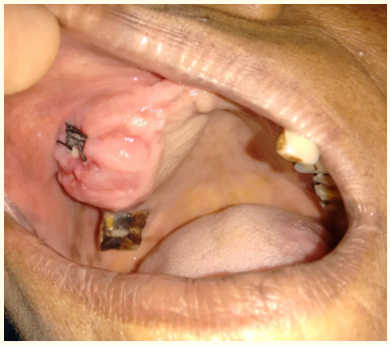

Figure 2: *Pre-operative intraoral view of the swelling.*

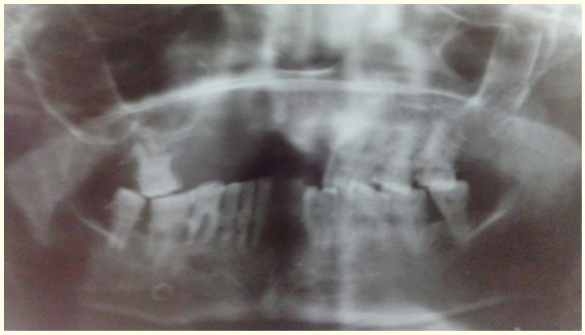

Figure 3: *Radiographic view.*

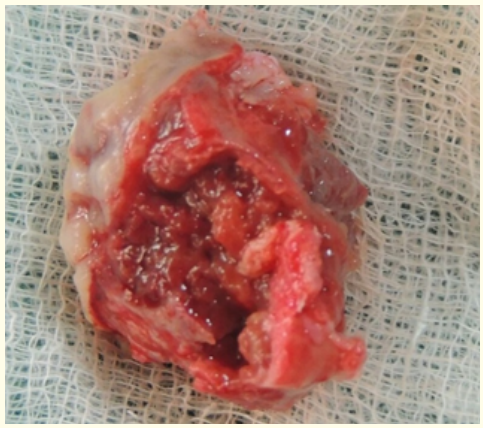

Figure 4: *Excision of the lesion.*

Discussion

Giant cell lesions are benign non odontogenic growth characterized by multinucleated giant cells which are formed from osteoclasts. Giant cell granuloma otherwise known as reparative granuloma can be central (within the bone) or peripheral (within the gingival). PGCG originates from the osteoclasts which are left from physiological resorption or reaction to injury to the mucoperiosteum. Since these cells have proved the presence of calcitonin in its membrane receptor and its osteoclastic activity when cultured in vitro are evidences that these lesions are formed due to action of osteoclasts [5-8]. But some studies in literature suggested that the lesion is formed by cells of the mononuclear phagocyte system [9].

The initiating stimulus for the growth of peripheral giant cell granuloma has been believed to be due to local irritation of the muco-periosteum, but the cause is not certainly known. In the present case patient has given a history of removal of ill fitting denture which she was wearing for 4 years and extraction of abutment tooth which either could be the initiating factor for the onset of lesion. PGCG are believed to occurs throughout the life with peak incidence during mixed dentition period [10] and 3rd or 4th decade and has got female predilection [11]. In the present case it was a female of 60 yrs old. Majority of PGCG occurs at the mandible usually anterior to first molars

occasionally crossing mandibular midline. But the present case reported an unusual location of the lesion which was at the maxillary anterior region. Clinically PGCG can sometimes confused with other common pathologies like pyogenic granuloma, although the PGCG often is more bluish-red compared with the bright red color of a typical pyogenic granuloma.

Although the PGCG develops exclusively in soft tissue, "cupping" superficial resorption of the underlying alveolar bony crest is sometimes seen. Also, it may be sometimes difficult to determine whether the mass is a central lesion which erodes through the cortical plate into the gingival soft tissues forming a peripheral lesion [12-14]. At the present case since the surrounding alveolar bone doesn't shows any abnormalities, we could clearly correlate the diagnosis as peripheral granuloma. The extra-osseous characters of other giant cell lesions like cherubim, brown tumor of hyperthyroidism involving the gingiva appear very similar to giant cell epulis [14]. However, the clinical characteristics, histological findings (giant cells contained within the fibroblastic matrix), serum levels of parathyroid hormone (compatible with normal levels) confer the diagnosis of giant cell granuloma, and allow us to approach the surgical treatment properly in the present case.

Regarding the management, controversy may arise with regard to the aggressiveness of surgical treatment. One of the conservative treatment reported in the literature for PGCG was the administration of calcitonin and interferon alpha based on the similarities existing between giant cell granuloma, brown tumors in hyperpa-rathyroidism, and some proliferative vascular lesions. Unfortunately, on occasions the result has not been as successful, producing severe secondary complications due to the difficulty in managing these types of drug [15].

Conclusion

At the present case, complete surgical excision of the lesion was done, taking into consideration that no bony involvement and chance of recurrences of the lesion was infrequent. There were no intra operative or postoperative complications and wound healing was uneventful.

Funding

Nil.

Consent for Publication

Written informed consent was obtained from the patient for publication of this case report.

Competing Interests

Nil.

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