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Peripheral Giant Cell Granuloma of Maxilla: A Case Report

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ABSTRACT

Peripheral giant cell granuloma is a benign and reactive hyperplastic lesion originating from the periosteum and resulting from local stimulation or trauma. It is more aggressive due to its high growth potential and may involve the cortical plate. Diagnosis is based on histopathological findings. It occurs mostly in the lower jaw, but can also occur in the upper jaw. It often appears as a nodular purple mass on the gums or mucosa of the edentulous alveolar ridge. we report a case of maxillary peripheral giant cell granuloma with bone resorption in a 46-year-old male patient, who was treated with an excisional biopsy.

Keywords: Peripheral giant cell; Reactive; Jaw.

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Introduction

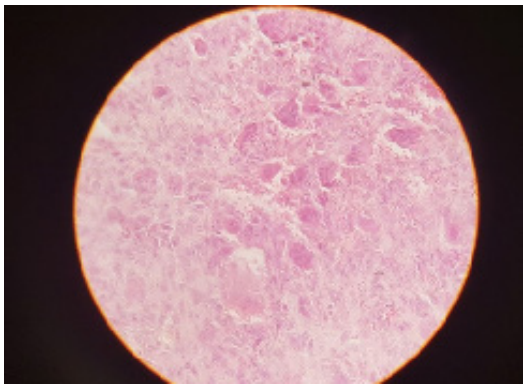
Giant cell granulomas are local non-neoplastic hyperplastic lesions that can develop after trauma and inflammation [1]. Giant cell granulomas are classified into peripheral and central categories. Central giant cell granuloma is created inside the bone, while peripheral giant cell granuloma is created peripherally in alveolar mucosa and gums. PGCGs are often observed in the ages of 40-60 years and are more common in women [2]. Clinically, PGCG presents as a solitary purplish-reddish lesion with an occasionally ulcerated surface, often involving the interdental papilla, edentulous alveolar margin, or marginal gingival surface. The lesion can be pedunculate or broad base [3]. PGCG can sometimes grow up to about 2cm [4]. In terms of radiography, PGCGs have non-specific radiographic criteria, which appear as periodontal ligament widening, displacement of adjacent teeth, surface erosion of the underlying bone, and cup-shaped radiolucency [3]. Although the etiology of PGCG is unknown, it is considered as a reactive hyperplastic lesion.

Periodontal problems, traumatic tooth extraction, periodontal surgery, dentures and improper restorations, plaque, dental plaque, food accumulation, orthodontic treatment, hormonal changes, and hyperparathyroidism are considered to be the causes [2]. It has also been reported with dental implants [5]. Histologically, PGCG consists of numerous multinucleated osteoclastic giant cells in a stroma of cross-linked fibrillar connective tissue. High vascularization along with spindle fibroblast cells as well as the presence of bone trabeculae due to multiple foci of bone formation are observed [6]. PGCG treatment is an excisional biopsy of the lesion along with part of the margin and curettage of the area. Removal of local etiological factors is necessary to prevent recurrence of the lesion. In this case report, the process of diagnosis and treatment of a patient with PGCG in the upper jaw is presented.

Clinical Report

A 46-year-old man complained of a prominent lesion in the upper jaw referred to the Oral Diseases Department of Hamedan Dental Faculty. According to the patient's statement, the damage was caused about 6 months ago. After the patient visits the dentist, the cause of the lesion is diagnosed due to improper hygiene and according to his advice, all the teeth of the person are removed. After tooth extraction, the size of the lesion does not change and the lesion does not heal. Then, according to the patient, he tried to remove the lesion with a razor at home, which was accompanied by a lot of bleeding, and after the initial healing of the wound, the lesion recurred again. Based on the clinical manifestations, an exophytic lesion with a broad base and a dark red lobular surface with dimensions of approximately 1.5 x 2.5 x 3cm was observed on the edentulous ridge of the lateral tooth and the left canine of the maxilla, which extended to the depth of the vestibule. The lesion was not painful and firm to the touch. During the examination, a slight bump could be felt in the contour of the alveolar bone and its consistency was hard. The surface of the lesion would bleed with manipulation. The patient had no systemic symptoms, fever, weight loss, or lethargy. He had no history of taking any special medication.

A biopsy was performed for the patient after obtaining a periapical radiograph. During the biopsy, a yellow band was observed with an elastic consistency (Figure 2) The patient then stated that after the recurrence of the lesion, he closed it with an elastic band. Because in his opinion, the lack of blood supply to the lesion will cause it to fall off by itself. Based on the clinical appearance during surgery, a cup-shaped bone resorption was observed under the lesion. An increase in the volume of cancellous bone was seen on the alveolar bone surface of the lesion. After removing the lesion, the area was covered with Co-pack and sutures and sent to the pathology department for histopathology examination. On microscopic examination, the histopathological section showed the proliferation of multinucleated giant cells was evident in the hypervascular fibrotic field. No evidence of cellular atypia and mitotic activity was observed. The laboratory tests of PTH, CA, and P have been performed.



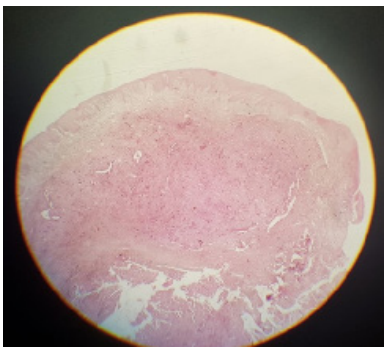


Figure 1 and 2. The histopathology view of the lesion with 10 and 40 magnification (the presence of tissue containing the proliferation of multinucleated giant cells was evident in the vascular fibrotic field. No evidence of cellular atypia and mitotic activity was observed).

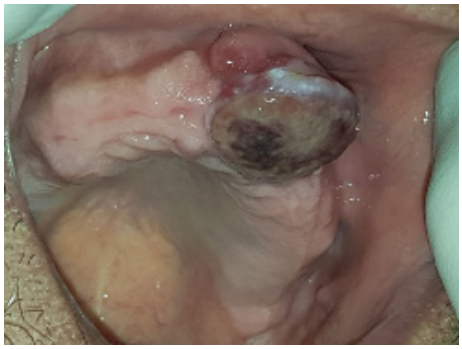


Figure 3. Clinical appearance of a purple exophytic lesion in the anterior region of the maxilla.

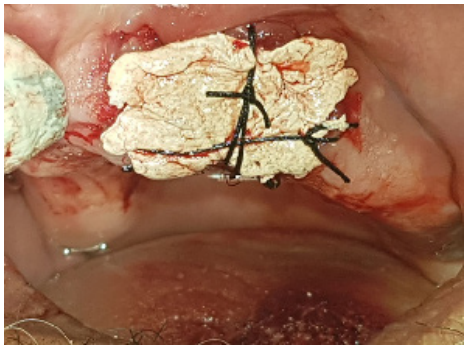


Figure 4. Intraoral manifestation after biopsy of the lesion.

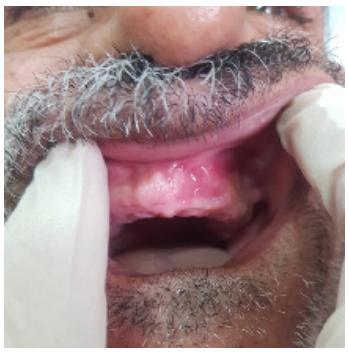


Figure 5. Follow up after two weeks.

Discussion

PGCG is one of the exophytic lesions of the oral cavity. These lesions originate from the periodontal ligament or periodontium following stimulation with local stimuli such as plaque, improper restoration, tooth extraction, and chronic inflammation [7]. Although PGCGs are seen in all age groups, they are most commonly seen in the 40-60 age group. In addition, PGCGs are more common in the lower jaw than the upper jaw. Many studies have shown that PGCG is more common in women [8]. In this case report, the patient was a 46-year-old man and the lesion was seen in the left lateral and canine of the upper jaw. Clinically, fibroma, peripheral osseous fibroma, hemangioma, and pyogenic granuloma are included in the differential diagnosis. microscopically, Brown's tumor and benign bone dysplasias are considered in the differential diagnosis [2]. PGCG is purplish-bluish compared to pyogenic granuloma, which is bright red. And cup-shaped bone resorption can be seen in this lesion [9].

Due to its high recurrence rate (mean 9.9%), complete removal of the lesion along with its base as well as elimination of the underlying factors is the treatment of choice. It has been suggested that in addition to excision to remove the base of the lesion, curettage should also be performed [1]. It should be remembered that these lesions can reach large sizes if ignored. The clinician should know that by removing the lesion and removing the predisposing factors, the recurrence rate will be reduced. Also, long-term follow-up is necessary in these cases.

Conflict of Interest

There is no conflict of interest to declare.

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