Peripheral Giant Cell Grauloma - A Case Report

Ohri T¹, Singh B², Nanda T³, Singh N⁴

¹ Senior Lecturer, Department of Periodontology & Implantology, Bhojia Dental College & Hospital, Baddi, H.P.;  
² Professor & Head, Department of Periodontology & Implantology, Bhojia Dental College & Hospital, Baddi, H.P.;  
³ Reader, Department of Periodontology & Implantology, Bhojia Dental College & Hospital, Baddi, H.P., India;  
⁴ Reader, Department of Pediatric & Preventive Dentistry, Bhojia Dental College & Hospital, Baddi, H.P., India;

ABSTRACT:
Peripheral giant cell granuloma is a condition arising from connective tissue of the gingiva, periodontal membrane, periosteum of alveolar ridge, or in response to local irritation. It occurs on the gingiva or alveolar ridge and is more commonly seen in the mandible. It is a benign reactive lesion of the gingiva which appears as a firm, nodular mass, red to bluish red in colour. The etiology of peripheral giant cell granuloma is still precisely unknown. Local irritation due to dental plaque or calculus, periodontal disease, poor dental restorations, ill-fitting dental appliances, or dental extractions have been suggested to contribute to the development of the lesion. This article reports the management of peripheral giant cell granuloma in a 30 years old female patient.

Key words: Peripheral Giant Cell Granuloma, Periodontal Membrane, Periodontal Disease, Nodular Mass

Received: 6 November, 2019 Revised: 21 December, 2019 Accepted: 23 December, 2019

Corresponding Author: Dr. Tanvi Ohri, Senior Lecturer, Department of Periodontology, Bhojia Dental College and Hospital, Baddi, Himachal Pradesh, India


INTRODUCTION:
Peripheral giant cell grauloma is an infrequent reactive, exophytic lesion of the oral cavity, also known as giant-cell epulis, osteoclastoma, giant cell reparative granuloma, or giant cell hyperplasia.¹ The etiology of peripheral giant cell grauloma is unknown, but local irritation due to dental plaque or calculus, periodontitis, faulty restorations, ill-fitting dentures, may contribute to the development of the lesion.² It is a benign, generally asymptomatic hyperplastic lesion of the attached gingiva or alveolar mucosa. It is manifested clinically as a painless, soft, nodular mass, usually red to reddish-blue in color. The lesion is usually asymptomatic; however, repeated trauma due to occlusion can lead to its growth with eventual ulceration and secondary infection. Rarely, the lesion is painful in nature. A lesion with secondary infection may appear as a ‘yellow zone’ caused due to the aggregation of a fibrin clot at the ulcer site.³ Peripheral giant cell graulomas can occur at any age, but most commonly are noted between the fourth and sixth decades and appear to be more common in women.² The mandible is affected slightly more than the maxilla. This case report describes a 30 years old female patient presenting with Peripheral giant cell grauloma in the mandibular anterior region.

CASE REPORT
A 30-years-old female patient reported to the department of Periodontology, Bhojia Dental College and Hospital, Baddi with the chief complaint of a swelling in the lower front region of the mouth since one year. Patient history revealed that the swelling was
noticed by her one year back, when it started interfering with speech and mastication. The swelling was small in size to begin with and gradually increased to the present size. There was no complaint of pain associated with the lesion however, bleeding was reported occasionally due to accidental biting on it. The lesion interfered significantly with speech and mastication, because of which she sought removal of the lesion. Medical history of the patient revealed no known systemic diseases and the lymph nodes in the head and neck region were also not palpable. Intraoral examination revealed a solitary, ovoid, sessile, reddish blue growth on the mandibular lingual and interdental gingiva in the 31, 32, 33, 34, 41, 42 and 43 region. The growth was approximately 3 cm x 2 cm in dimensions. It was firm in consistency, along with surface ulceration. The patient also presented with poor oral hygiene status. The mandibular left central and lateral incisors were grade III mobile. Radiographic examination showed localized bone loss associated with the lesion and also displacement of the teeth no. 31, 32, 41 and 42. Erosion of the bone with ‘cuffing’ was seen in the region of lesion, which is pathognomonic of the lesion. An incisional biopsy was performed and the specimen was sent for histopathological examination. The lesion was diagnosed as peripheral giant cell granuloma through histopathological examination. Once the diagnosis was confirmed, a complete surgical excision was performed. The lesion was excised with the help of diode laser with some surrounding normal tissue. A wide excision was done to prevent recurrence. The excised lesion was put in 10% formalin and sent for histopathological examination, which confirmed the diagnosis of peripheral giant cell granuloma once again.

HISTOPATHOLOGICAL FINDINGS

The histopathological examination showed non-keratinized stratified squamous epithelium with underlying connective tissue stroma comprising of dense collagen fibers interspersed with plump fibroblasts. Multinucleated giant cells were seen in the connective tissue. Ossifications, blood vessels and lymphocytes were also seen. All these findings led to the diagnosis of Peripheral giant cell granuloma.

DIFFERENTIAL DIAGNOSIS

Differential diagnosis of peripheral giant cell granuloma is important as there are variety of other lesions that resemble peripheral giant cell granuloma and that are associated with a difference in their treatment and their prognosis. The focal proliferative growths occurring on gingival tissue that have a close resemblance with Peripheral giant cell granuloma include pyogenic granuloma, hemangioma, Central Giant Cell Granuloma, peripheral ossifying fibroma (POF) and metastatic carcinomas.3

DISCUSSION

Peripheral giant cell granuloma is not a true neoplasm but rather a benign hyperplastic reactive lesion caused by local irritation or chronic trauma.2 It is a benign, non odontogenic, moderately rare tumor of the oral cavity.2 PGCGs account for less than 10% of all hyperplastic gingival lesions.6 Although the lesion may be found in very young children as well as in dentulous or edentulous elderly persons, most patients are in fourth to sixth decades of life and the mean age of patients at the time of diagnosis is typically 38-42 years. Females are affected almost twice as frequently as males – 65% as compared to 35%.2 Chronic local irritation of the gingiva can lead to the manifestation of peripheral giant cell granuloma, which is thought to either originate from the periodontal membrane surrounding the tooth or from the periosteum of the bone. Since the periodontium responds to the similar irritants in a different way, it is suggested that peripheral giant cell granuloma is a more intense response of periosteum to the irritation factors than that associated with the formation of the more common lesion that is pyogenic granuloma.3 Peripheral giant cell granuloma may vary considerably in clinical appearance. It always occurs on the gingiva or alveolar process, most frequently anterior to the molars, and presents itself as a pedunculated or sessile lesion that seems to be arising from deeper in the tissue than many other superficial lesions of the area such as fibroma or pyogenic granuloma, either of which it may resemble clinically.5 The consistency of lesions is dependent on the age of lesions because as time passes, maturation of lesions (increase in collagen fibers) occurs and consistency shifts from soft to firm.6 The lesion must be differentiated from other forms of enlargements usually seen in the area. A histopathological examination is required to establish a definitive diagnosis. The peripheral giant cell granuloma has numerous foci of multinuclear giant cells and hemosiderine particles in a connective tissue stroma. Areas of chronic inflammation are scattered throughout the lesion, with acute involvement at the surface.6 The giant cells may contain only a few nuclei or several of them. The giant cells are believed to originate from osteoclasts.7,8,9 Bo Liu et al in their study concluded that RANKL, OPG and RANK expressed in these lesions may play important roles in the formation of multinucleated giant cells.5,10 Laboratory studies may include serum calcium level or parathyroid hormone levels to rule out the rare possibility of brown tumor.2 The treatment of choice is surgical excision with the suppression of the underlying etiologic factors. The periosteum must be included in the excision to prevent recurrences. The recurrence rate of PCGC has been reported to range from 5-70.6% (average 9.9%).1
CONCLUSION
Peripheral giant cell granuloma is not a routinely encountered lesion in dental practice. It is important to have a thorough knowledge about the clinical presentation and etiopathogenesis of this lesion. This will not only help the clinician to manage it effectively, but also prevent the recurrence of the lesion once it has been excised. A diagnosis of peripheral giant cell granuloma can be made based on clinical, radiographic and histopathological investigations, which allows a conservative management of the lesion with minimum damage to adjacent teeth and tissues.

Figure 1 – Intra-oral clinical presentation of the lesion

Figure 2 – Intra-operative view showing excision of the lesion with LASER

Figure 3 – Immediate post-operative view

Figure 4 – Excised lesion, approximately 3 cm x 2 cm.

Figure 5 – One day post-operative view
REFERENCES