Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr ICV 2018= 82.06

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Case Report

Peripheral Giant Cell Grauloma - A Case Report

Ohri T[1], Singh B[2], Nanda T[3], Singh N[4]

[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

This article may be cited as: Ohri T, Singh B, Nanda T, Singh N. Peripheral Giant Cell Grauloma – A Case Report. J Adv Med Dent Scie Res 2020;8(1):19-22.

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.[4] 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 seeked 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 grauloma 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 grauloma 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 grauloma.

DIFFERENTIAL DIAGNOSIS

Differential diagnosis of peripheral giant cell grauloma is important as there are variety of other lesions that resemble peripheral giant cell grauloma 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 grauloma include pyogenic granuloma, hemangioma, Central Giant Cell Granuloma, peripheral ossifying fibroma (POF) and metastatic carcinomas.[3]

DISCUSSION

Peripheral giant cell grauloma is not a true neoplasm but rather a benign hyperplastic reactive lesion caused by local irritation or chronic trauma.[5] 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 grauloma 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.[2]

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 enlargenments 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.[1, 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 grauloma 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.

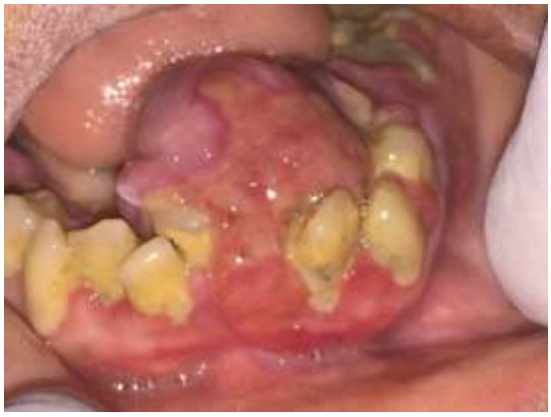

Figure 1 – Intra-oral clinical presentation of the lesion

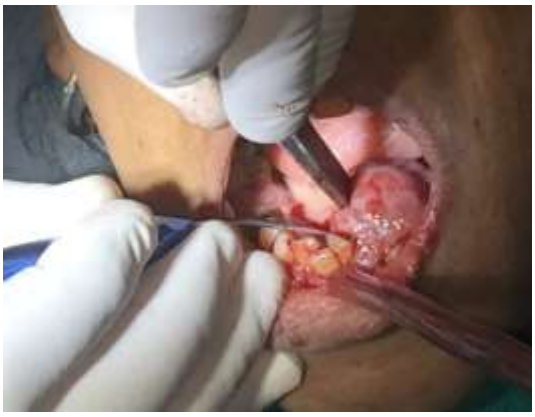

Figure 2 – Intra-operative view showing excision of the lesion with LASER

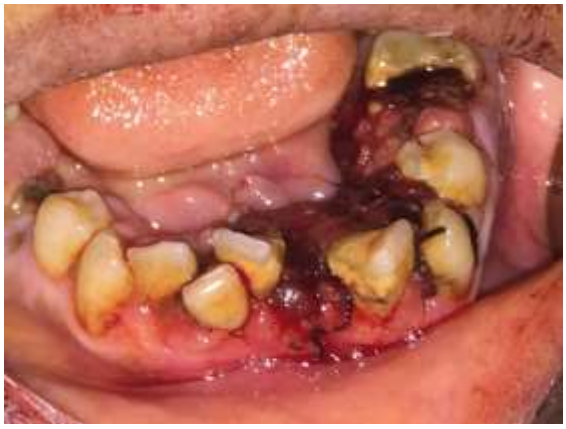

Figure 3 – Immediate post-operative view

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

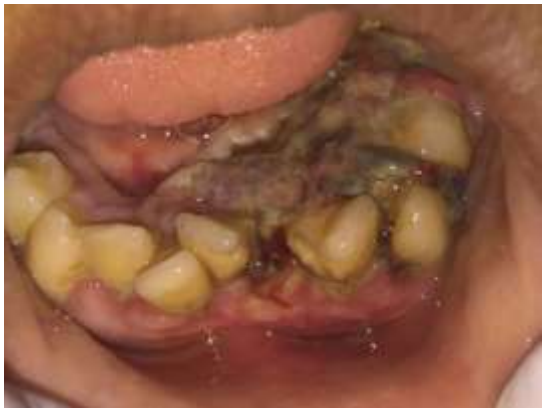

Figure 5 – One day post-operative view

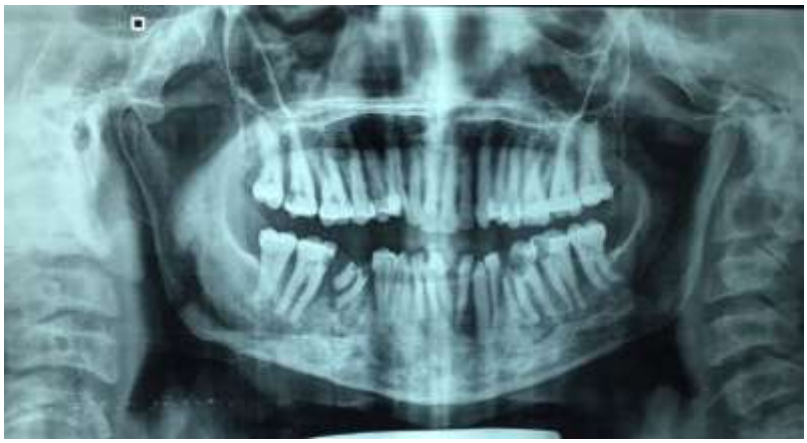

Figure 6 – Orthopantomogram showing bone loss in 31, 32, 41 and 42 region.

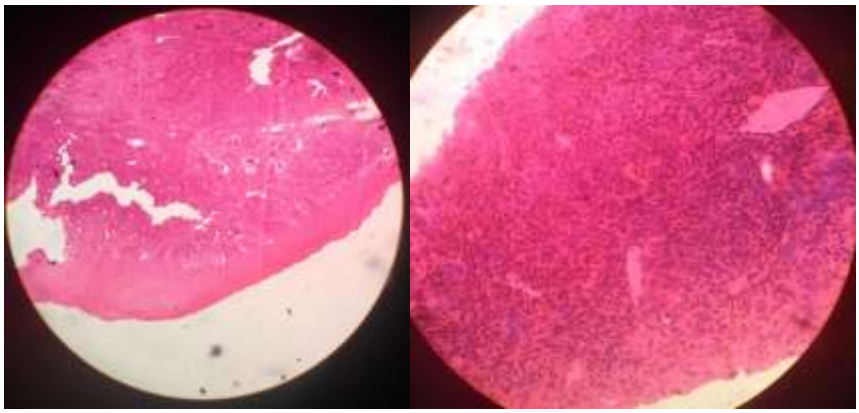

Figure 7 – Hematoxilin and Eosin staining, showing non-keratinized epithelium, connective tissue with chronic inflammatory cells, plump fibroblasts and multinucleated giant cells. [x10 left and x100 right]

REFERENCES

1. Falaschini S, Ciavarella D, Mazzanti R, Di Cosola M, Turco M, Escudero N, Bascones A, Lo Muzio L. Peripheral giant cell granuloma: immunohistochemical analysis of different markers. Study of three cases. Avances En Odontoestomatología. 2007; 43(4): 189-96.
2. Rajendran R, Sivapathasundharam B. Shafer's Textbook of Oral Pathology. 6th edition. Elsevier, India, 2009.
3. Patil KP, Kalele KP, Kanakdande VD. Peripheral giant cell granuloma: A comprehensive review of an ambiguous lesion. Journal of the International Clinical Dental Research Organization 2014; 6(2): 118-25.
4. Pirih F, Barroso AD, Tatarakis N, Cordell K, McCauley L, Edwards P. A Case Report of a Peripheral Giant Cell Granuloma in a Patient on Forteo. Open Journal of Stomatology 2015; 5: 147-151.
5. Khatry P, Pradhan P, Ghom S.Peripheral Giant Cell Granuloma: A Case Report and Review of Literature. Journal of Indian Academy of Oral Medicine and Radiology 2011; 23(4): 638-40..
6. Kishore K, Lone PA. Peripheral Giant Cell Granulomas Of Oral Cavity: Our Experience. J of Evolution of Med and Dent Sci 2015; 4(57): 9877-82.
7. Tandon PN, Gupta SK, Gupta DS, Jurel SK, Saraswat A. Peripheral Giant Cell Granuloma. Contemporary Clinical Dentistry 2012; 3(1): 118-21.
8. El-Mofty SK, Osdoby P. Growth Behavior and Lineage of Isolated and Cultured Cells Derived from Giant Cell Granuloma of the Mandible. J Oral Pathol 1985; 14: 539-52.
9. Cohen MA, Grossman ES, Thompson SH. Features of Central Giant Cell Granuloma of the Jaws Xenografted in Nude Mice. Oral Surg Oral Med Oral Pathol 1988; 66: 209.
10. Bo Liu, Shi-Feng Yu, Tie-Jun Li. Multinucleated Giant Cells in Various Forms of Giant Cell Containing Lesions of the Jaws Express Features of Osteoclasts. J Oral Pathol Med 2003; 32: 367.