Peripheral Giant Cell Granuloma: A Case Report and Review of Literature

Poonam Khatry, Pranoti Pradhan, Savita Ghom

1Reader, Department of Periodontology, Chhattisgarh Dental College and Research Institute, Rajnandgaon, Chhattisgarh, India
2Professor, Department of Oral Medicine and Radiology, Chhattisgarh Dental College and Research Institute, Rajnandgaon, Chhattisgarh, India
3Postgraduate Student, Department of Oral Medicine and Radiology, Chhattisgarh Dental College and Research Institute Rajnandgaon, Chhattisgarh, India

Correspondence: Poonam Khatry, Reader, Department of Periodontology, Chhattisgarh Dental College and Research Institute Rajnandgaon, Chhattisgarh, India, e-mail: poonamkhatry@yahoo.co.in

ABSTRACT

The peripheral giant cell granuloma is a reactive exophytic lesion of jaws seen on the gingival and alveolar ridge usually result of local irritating factors, such as trauma, tooth extraction, etc. Peripheral giant cell granuloma manifests as red purple nodule located in the region of gingiva or edentulous alveolar margins. This report describes a case of large peripheral giant cell granuloma in mandibular posterior region. The lesion was excised under LA and confirmed as peripheral giant cell granuloma after histopathological investigations. Two weeks after surgery, area of lesion appeared healed. No recurrence of lesion was found.

Keywords: Peripheral, Giant cell granuloma, Giant cell epulis, Reparative giant cell granuloma.

INTRODUCTION

Peripheral giant cell granuloma (PGCG) is the most frequent giant cell lesion of the jaws and originates from the connective tissue of the periosteum or from the periodontal membrane in response to local irritation or chronic trauma. This condition has also been referred to as peripheral giant cell tumor, giant cell epulis, osteoclastoma, reparative giant cell granuloma and giant cell hyperplasia. The etiology of lesion is still not precisely defined. Some investigators consider it to arise in response to local irritating factors, such as tooth extraction ill fitting prosthesis, poor restoration calculus, etc. Clinically, PGCG manifests as small, well demarcated, soft swelling, sessile or pedunculated, deep red to bluish in color. The histological features consist of a highly cellular mass with abundant multinucleate giant cells. Chronic inflammatory cells are present. Fibroblast form the basic element of PGCG. There may be evidence of superficial destruction of alveolar margin or crest of interdental bone on radiograph. The treatment is simple conservative excision with removal of any local source of irritation.

CASE REPORT

A 30-year-old male reported to Department of Oral Medicine and Radiology, Chhattisgarh Dental College and Research Institute, Rajnandgaon with the chief complaint of swelling in right lower mandibular region since 1 year (Fig. 1). No pain was associated with the lesion. Occasionally, there was bleeding from the lesion while eating and it had grown in size in last few months. No extraoral findings were present. Intraoral examination revealed reddish pink, well-defined, firm, nontender and nonfluent swelling of 5 × 4.5 cm extending from distal aspect of 42 to mesial aspect of 47. Generalized deposits of calculus and marginal recession of gingival were present. Routine blood tests were found normal. Serum alkaline phosphatase, calcium and phosphorus levels were within normal limits. Radiological examination revealed no evidence of bone involvement. Patient was referred to department of periodontology where complete excision of lesion was done under LA. Wound healed satisfactorily (Fig. 2). Histological examination with hematoxylin and eosin stain was performed. Histopathological examination showed fibrovascular connective tissue struma with numerous large multinucleated giant cells and numerous capillary foci of hemorrhage (Fig. 3).
DISCUSSION

PGCG is not a true neoplasm but rather a benign hyperplastic reactive lesion caused by local irritation or chronic trauma. Although the etiology is subject to controversy many authors consider the origin to comprise as an abnormal proliferative response to aggression. Different local factors have been associated with PGCG including complicated dental extraction, dental restorations in poor conditions, food impaction, plaque and calculus, ill-fitting dentures, etc. A possible hormonal influence for some PGCG has been postulated. Some hormones (estrogen and progesterone) may have immuno-suppressive action and may contribute to growth of lesion. In rare cases, giant cell granuloma is an oral manifestation of hyperparathyroidism. The latter can be suspected when multiple lesions are identified and the patient suffers recurrences despite adequate treatment.

The lesions can appear at any age the highest incidence (40%) is fourth to sixth decade of life. PGCG affects females more than male. It is more common in lower jaw than upper jaw with posterior area being more probable site. They are rather unique lesions of oral cavity occurring on gingival or alveolar mucosa, but never found on nonosseous supported tissue, the size of the lesion varies between 0.5 to 1.5 cm. Bodner et al reviewed 15 cases of large (more than 2 cm) lesions suggesting its growth potential and showed that patients with poor oral hygiene or with xerostomia are prone to have larger lesions. The consistency of lesion is dependant on the age of the lesion, because as time passes maturation of the lesion (increase in collagen fibers) occurs and consistency shift from soft to firm. Ulceration and bleeding can occur secondary to trauma.

The histopathology of PGCG reveals large number of multinucleated giant cell in vascularized fibrocellular stroma, in some cases the giant cell may be found in lumen of capillaries. The exact basis of giant cell is still uncertain. Many opinions have been offered in the literature as osteoblast, phagocytes, endothelial cells and spindle cells are responsible for giant cell proliferation. Hemorrhage, hemosiderin pigment, inflammatory cells and newly formed bone or mature calcified material may be present throughout the cellular stroma. A zone of dense connective tissue representing a pseudocapsule usually separates the giant cell proliferation from superficial epithelial surface.

Sometimes PGCG causes cupping resorption of underlying alveolar bone and presence of recurrent lesion is associated with root resorption, widening of the periodontal ligament space is often a finding associated to dental mobility though in some situations it may represent lesion spread around the root. A range of disorders should be considered in the differential diagnosis of peripheral granuloma, including pyogenic granuloma, fibrous epulis, peripheral ossifying fibroma, inflammatory fibrous hyperplasia, peripheral odontogenic fibroma, hemangioma cavernosum and papilloma. The histological study of the resected tissue establishes the definitive diagnosis. The treatment of PGCG comprises surgical resection and suppression of the underlying etiologic factors with elimination of the entire base of the lesion. If resection is only superficial, the growth may recur. Most lesions respond satisfactorily to thorough surgical resection, with exposure of all the bone walls. When the periodontal membrane is affected, extraction of the adjacent teeth may prove necessary to ensure full resection, though this is initially contraindicated. Recurrence is infrequent and is observed in 5 and 11% of cases.

CONCLUSION

In conclusion, early and precise diagnosis of the lesion can allow conservative management without destruction of tooth and adjacent bone.

REFERENCES


