ORIGINAL RESEARCH PAPER

Periodontology

PERIPHERAL GIANT CELL GRANULOMA- A CASE REPORT

KEY WORDS: .

Dr Purnima Nadkerny HOD, Department of Periodontology, New horizon Dental College and Research Institute, Bilaspur, Chhattisgarh.

Dr Deepshri Agrawal PG Student, Department of Periodontology, New horizon Dental College and Research Institute, Bilaspur, Chhattisgarh.

Dr Shreemohan Mishra PG Student, Department of Periodontology, New horizon Dental College and Research Institute, Bilaspur, Chhattisgarh.

Dr Pramod V Reader, Department of Periodontology, New horizon Dental College and Research Institute, Bilaspur, Chhattisgarh.

Dr Hiroj Bagde Senior Lecturer, Department of Periodontology, New horizon Dental College and Research Institute, Bilaspur, Chhattisgarh.

ABSTRACT

Gingival overgrowth is a common clinical finding in clinical practice that may occur as a result of a response to various stimuli or as interactions with host or environment. These lesions could be localized to certain aspects of oral cavity or else could be generalized. The etiology may be related to plaque, hormonal imbalances or systemic induced manifestations. These may also interfere with speech, mastication, tooth eruption, esthetics along with poor oral hygiene. So accurate diagnosis is important for appropriate management. Such cases should be treated in methodical manner, involving detailed medical history followed by conventional nonsurgical therapy. To preserve esthetic and functional needs, a surgical therapy may be desirable. So, for successful therapeutic outcome, emphasis should also be given on patient awareness and motivation, along with timely recall visits.

INTRODUCTION

Peripheral giant cell granuloma is a reactive lesion and infrequent exophytic lesion of oral cavity. It is also known as giant cell epulis, osteoclastoma, giant cell reparative granuloma or giant cell hyperplasia.[1]It is distinguished from other inflammatory hyperplastic lesion by presence of multinucleated giant cells whose etiology is still unknown. But its origin may be due to local irritation due to dental plaque or calculus, periodontal disease, poor dental restorations, ill-fitting dental appliances or dental extractions.[2]

The lesion can be found in very young children as well as in dentulous or edentulous elderly patients, commonly found between 4th to 6th decade of life with more prevalence in females than in males.[3]

Lesions are generally asymptomatic with varying sizes and clinical appearance. It always occur on gingiva or alveolar mucosa and can be pedunculated or sessile lesion arising from deeper in tissue. It is one of the common giant cell lesions of jaw, originating from connective tissue of periosteum or periodontal ligament.[4]

Histological features consists of non-encapsulated mass of tissuecontaining large number of ovoid or spindle shaped connective tissue cells and multinucleated giant cells. Giant cells resemble osteoclast and are larger than osteoclast. Also, capillaries, foci of hemorrhage, mononuclear phagocytes and inflammatory cell infiltration are also characteristic features.

Radiographic findings may or may not reveal evidence of involvement of bone underlying lesion. In edentulous patients, superficial erosions of bone with pathognomonic peripheral "cupping" of bone may exhibit.[2]

This case report presents with peripheral giant cell granuloma.

CASE REPORT

zA 50 year old patient reported in the department of Periodontology, NHDCRI, Bilaspur with a chief complaint of soft tissue overgrowth on right side of floor of mouth in relation to 43 to 46. The swelling was asymptomatic. The patient did not give any medical history of systemic disease. No extraoral or other abnormalities were detected.

Figure 1: Preoperative view

Intraoral examination revealed the presence of firm, smooth, pedunculated swelling extending from distal aspect of mandibular right canine to mesial aspect of mandibular right 1st molar obliterating the mandibular buccal vestibule (Fig 1). The surface of the lesion was pale pink and dimension of the lesion measured was 15 mm. Other associated periodontal findings were generalized gingival recession and deep periodontal pocket present. Grade III mobility was present with 42. Grade II mobility was present with 33, 34, 35, 36,43,46. Oral hygiene status of patient was poor with presence of abundant plaque and calculus deposits. Patient gave history of recurrent intraoral swelling in the area of denture bearing region.

The OPG of the patient shows severe bone loss in relation to 46.

After completing phase-I therapy and re-evaluation after 15 days, excision of the soft tissue was performed (Fig 2, 3). The specimen was collected in 10% formalin and sent for histopathological examination to the Department of Oral Pathology, NHDCRI. The microscopic analysis revealed features of the lesion with large number of stromal fibroblastic cells and multinucleated giant cells (Fig 4). Post-operative healing was uneventful (Fig 5).

Figure 2: Excised Tissue

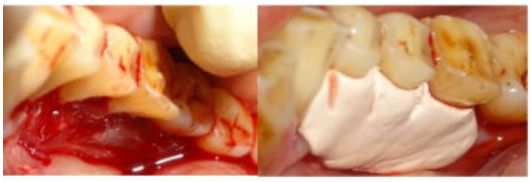

Figure 3: Immediate Post Operative

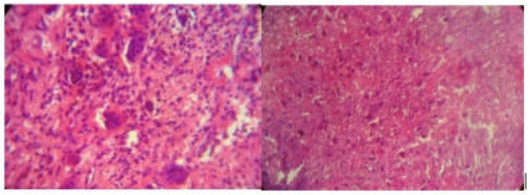

Figure 4: Histopathological Examination

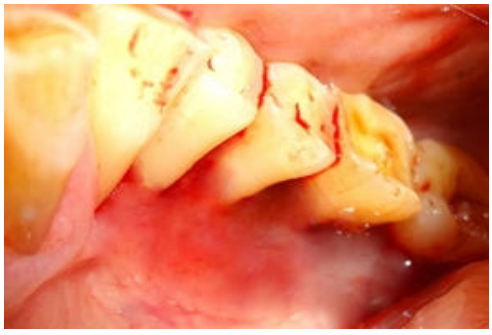

Figure 5: Post Operative (3 months)

DISCUSSION

Giant cell granuloma is a benign lesion. Its incidence is reported to be 0.00011% in head and neck region. It usually affects mandible in 70% cases and maxilla in remaining 30 % cases.WHO defined GCG histology as an intraosseous lesions consisting of cellular fibrous biological tissue, containing multiple hemorrhagic foci, aggregation of multinuclear giant cell, and occasionally trabeculae of woven bone.[7,8]

Central giant cell lesions (CGCL) are intraosseous non-proliferative lesions with unknown etiology. It occurs less frequently than PGCL and occur exclusively in maxillary bone. It presents slow asymptomatic growth with no recurrence or rapid painful growth with recurrence.[9,10]

Peripheral giant cell granuloma are reactive, extraosseous (soft gum tissue) and exophytic lesion. It is located in the alveolar ridge in edentulous area or in the gingiva. It usually occurs as a result of local irritants such as bacterial plaque, calculus, food retention, chronic infections, chronic irritation, trauma related to exodontia, poorly finished fillings, poorly fitted dental prostheses, occlusal forces and supernumerary teeth.[11,12]It originates either from periodontal ligament or from mucoperiosteum. It has low recurrence, mainly if the local irritant factor is eliminated.

These lesions are generally asymptomatic, having relatively rapid growth rate, attaining a size of 1 cm within a few months. It varies considerably in clinical appearance and presents itself as pedunculated or sessile lesion that seems to arise from deeper in tissue. Thus it seems to originate either from periodontal ligament or from mucoperiosteum. The size of lesion varies between 0.5 cm to 1.5 cm in diameter. It is most often dark red, vascular or haemorrhagic in appearance and commonly exhibits surface ulceration. The origin of giant cell granuloma is not identified clearly, few cells have been supposed to be responsible for giant cell proliferation such as osteoblast, endothelial cells, phagocytes and spindle cells.[13,14,15]

In terms of histology, there is an unencapsulated tissue mass with acute and/or chronic inflammatory infiltrate permeating highly cellularized fibrous tissue with foci of hemorrhage and deposition of hemosiderin. There is vascular proliferation and multinucleated giant cells permeated by massive oval to spindleshaped mesenchymal cells.[16,17] Giant cells varying in shapes and sizes, typically containing 8 to 15 nuclei. They may also be observed in areas of mature or immature reactive bone formation or dystrophic calcifications. The epithelial lining may be hyperplastic and/or ulcerated. Two types of giant cells have been described: type A cells, which correspond to eosinophilic polynuclear cells with abundant and diffuse cytoplasm and irregular nuclei, containing chromatin spread along the inner membrane; type B cells, which have regular and well-defined shape and more abundant and dense cytoplasm.[18]

The differential diagnosis can be central giant cell granuloma, pyogenic granuloma, peripheral ossifying fibroma, fibrous hyperplasia, inflamed irritation fibroma, hemangioma, lymphangioma, amelanotic melanoma and metastatic tumors.[19]

Radiographically, it exhibits superficial erosion of bone with pathognomonic peripheral 'cuffing' of bone in edentulous area. When tumor occurs in dentulous area, radiograph may reveal superficial destruction of alveolar margin or crest of interdental bone.

The conservative excision is typically curative. Prognosis is excellent. A recurrence rate of 10-15 % has been reported in most cases. If recurred, it can be easily managed with additional surgery.[20]

REFERENCES:

1. Ozkan E, Bodur S, Erdem G. Peripheral giant cell granuloma-a case report. Pakistan Oral and Dental Journal 2011;31:171-2.
2. Agrawal A, Murari A, Singh A, Vutukuri S. Peripheral giant cell granuloma-a case report. OMJP 2013;408-12.
3. Vasconcelos RG, Vasconcelos MG, Queiroz LMG. Peripheral giant cell carcinoma:etiology,origin of giant cells,diagnosis and treatment. J Bras Patod Med Lab 2013;49:446-52.
4. Falaschini S, Ciavarella D, Mazzanti R, Di Cosola M, Turmo M, Escudero N et al. Peripheral giant cell granuloma:immunohistochemical analysis of different markers. Study of three cases. Av Odontoestmatol 2007;23:189-96.
5. J de Lange, H.P. Vanden Akker,H Klip. Incidence and disease-free survival after surgical therapy of central Giant cell granuloma of jaw in the Nethelands. Head and neck 1995;26:792-5.
6. Kramer IRH, Pindborg JJ, Shear M. Histologic typing of odontogenic tumours, 2nd edition Berlin:springer Verlag 1991;31:32-5.
7. Alwan AH, Zardawi FM. Peripheral giant cell granuloma of the palatal gingiva-a case report. IOSR 2015;14:73-6.
8. Flaitz CM. Peripheral giant cell granuloma: a potentially aggressivelesion in children. Pediatr Dent 2000;22:232-3.
9. Yadalam U, Bhavya B, Kranti K. Peripheral giant cell granuloma:A case report. Int J Dent Case Rep 2012;2:30-4.
10. Patil VA, Shivakumar TP. Oral Pyogenic granuloma: A report oftwo cases. Ann Essences Dent 2010;2:93-7.
11. Giansanti JS, Waldron CA. Peripheral giant cell granuloma: Reviewof 720 cases. J Oral Surg 1969;27:787-91.
12. Shadman N, Ebrahimi SF, Jafari S, Eslami M. Peripheral giant cellgranuloma: A review of 123 cases. Dent Res J 2009;6:47-50.
13. Etoz OA, Demirbas AE, Bulbul M,Akay E. The peripheral giant cellgranuloma in edentulous patients: report of three unique cases. Eur JDent 2010;4:329-33.
14. Shadman N, Ebrahimi SF, Jafari S,Eslami M. Peripheral giant cellgranuloma: a review of 123 cases. Dent Res J 2009;6:47-50.
15. Rey JMG, Carneiro JLPM, Vila PG,Carrion AB, Garcia AG, Grana PM etal. Peripheral giant cell granuloma.Review of 13 cases. Medicina Oral 2002;7: 254-9.
16. Adlakha VK, Chandna P, Rehani U,Rana V, Malik P. Peripheral giant cellgranuloma. J Ind Soc Pedo Prev Dent 2010;28:293-6.
17. Chattha MR, Ali K, Aslam A, AfzalB, Shahzad MA. Current concepts incentral giant cell granuloma.Pakistan Dent & Oral Jr 2006;26:71-8.
18. Shadman N, Ebrahimi SF, Jafari S,Eslami M. Peripheral Giant CellGranuloma: A Review of 123 Cases.Dent Res J 2009;6:47-50.
19. Liu B, Yu SF, Li TJ. Multinucleatedgiant cells in various forms of giantcell containing lesions of the jaws express features of osteoclasts. J Oral Pathol Med 2003;32:367-75.
20. Moghe S, Gupta MK, Pillai A, Maheswari A. Peripheral Giant cell granuloma:a case report and review of literature. People's Journal of Scientific Research 2013;6:55-9.