International Journal of Current Advanced Research
ISSN: O: 2319-6475, ISSN: P: 2319-6505, Impact Factor: 6.614
Available Online at www.journalijcar.org
Volume 7; Issue 4(I); April 2018; Page No. 11932-11935
DOI: http://dx.doi.org/10.24327/ijcar.2018.11935.2084

CASE REPORT

PERIPHERAL GIANT CELL GRANULOMA OF GINGIVA: A CASE REPORT

Hiroj Bagde*., Ashwini Dhopte., Jyoti Patil and Soumodeep TAH

New Horizon Dental College, Bilaspur - 495 001, Chhattisgarh, India

A R T I C L E I N F O

Article History:

Received 17th January, 2018
Received in revised form 26th February, 2018 Accepted 9th March, 2018
Published online 28th April, 2018

Key words:

Peripheral giant cell granuloma, epulis, giant cell.

A B S T R A C T

Peripheral giant cell granuloma is a benign hyperplastic lesion of gingival arising interdentally or from the gingival margin and may be sessile and pedunculated. It is also known as giant cell epulis/ giant cell reparative granuloma/ osteoclastoma etc. It is a type of reactive exophytic growth of the gingival and the alveolar ridge which originates from the periosteum or periodontal ligament.
This report explains about a case which reported with a overgrowth its histopathology and the management.

Copyright©2018 ***Hiroj Bagde et al.*** *This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.*

INTRODUCTION

Peripheral giant cell granuloma (PGCG), is a lesion unique to the oral cavity, occurring only on the periosteum, periodontal ligament, and gingiva. It a benign, generally asymptomatic hyperplastic lesion that is set apart from other inflammatory hyperplastic lesions by the presence of multinucleated giant cells whose origin is yet undetermined.[1-3] This lesion is probably not present as a true neoplasm, but rather may be reactive in nature. [4,5]

PGCG is also known as peripheral giant cell tumor, giant-cell epulis, osteoclastoma, giant cell reparative granuloma, or giant cell hyperplasia.[6,7] The initiating stimulus has been believed to be due to local irritation or trauma, but the cause is not certainly known.[8,9] Local irritants such as plaque, calculus, periodontitis, periodontal surgery, tooth extraction, inadequate dental restorations, ill-fitting dentures, food impaction, supernumerary teeth, abnormal occlusal forces and chronic trauma are suggested as the etiological causes.[6,10,11] Dental implants can also cause traumatic damage to alveolar mucosa and to the underlying bone and may be predisposing factor for PGCG. Low socioeconomic status of the patients and unfavourable oral hygiene also seem to be predisposing factors to PGCG.[12] Peripheral giant cell granuloma can be associated with hyperparathyroidism secondary to renal failure.[13]

Peripheral giant cell granuloma originates from the interdental tissues (periosteum or periodontal membrane).[14,15]

Corresponding author:* **Hiroj Bagde
New Horizon Dental College, Bilaspur - 495 001, Chhattisgarh, India

Although the lesion may be found in very young children as well as in dentulous or edentulous elderly person, most patients were in fourth to sixth decade of life and the mean age of the patients at the time of diagnosis is typically 38-42 years. There is a nearly 2:1 predilection of females to males, with the mandible being involved more often than the maxilla.[16,17]

Clinical appearance of PGCGs can present as polyploidy or nodular lesions, primarily bluish red with a smooth shiny or mamillated surface, stalky or sessile base, small and well demarcated.[18] While incipient lesions often present as painless, lobular, and ulcerated masses with little complications and minor changes in gingival contour, progressive growth in some cases causes a significant swelling interfering normal oral function and resorption of the subjacent alveolar bone and teeth roots.[14] Lesions can become large; some attaining 2 cm. in size[19]. However, there have been reports of masses in excess of 5 cm, where factors such as deficient oral hygiene or xerostomia appear to play an important role in lesion growth[7]. Furthermore, a variable number of chronic inflammatory cells and neutrophils usually are present; underlying ulcerated areas.[20] Surgical excision is the treatment of choice for PGCG, with removal of local factors or irritants.

This case report describes the clinical and histopathological findings and management of a Peripheral giant cell granuloma found in the maxilla of a young female.

Case Report

A 16-year-old girl reported to Department of Periodontology, New Horizon Dental College, Bilaspur, Chhattisgarh with the chief complaint of swelling in upper front teeth region of the mouth since one month. Patient's history revealed that a small

swelling appeared one month back on the anterior maxillary (11,12) teeth region, which gradually increased to attain present size (FIGURE 1). The patient reported the lesion to be asymptomatic, but bleeding tendency was observed if accidentally brushed.

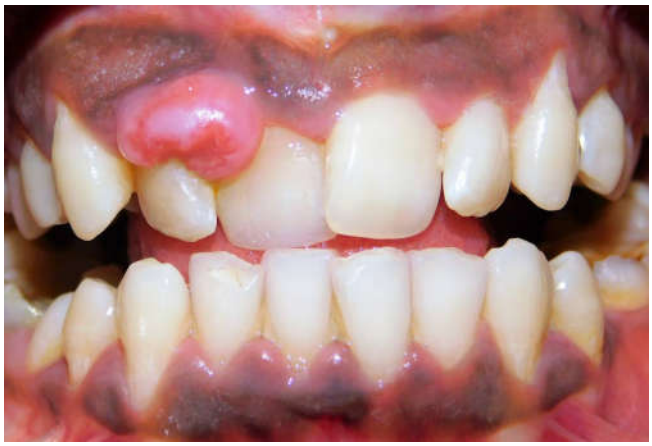

Fig 1 Preoperative

Extraoral examination did not reveal any pathological findings and facial asymmetry. Medical history of the patient revealed no systemic diseases; examination of lymph nodes in the head and neck region revealed no lymphadenopathy. Patient was systemically healthy and was not taking any medications.

Hard tissue examination revealed Grade I mobile 11, 21 with erythematous interdental papilla and marginal gingiva in relation to the same teeth. There was generalized bleeding on probing with minimal local factors. Based on the history elicited by the patient and the clinical findings, a provisional diagnosis of PGCG was given. A differential diagnosis of pyogenic granuloma was considered.

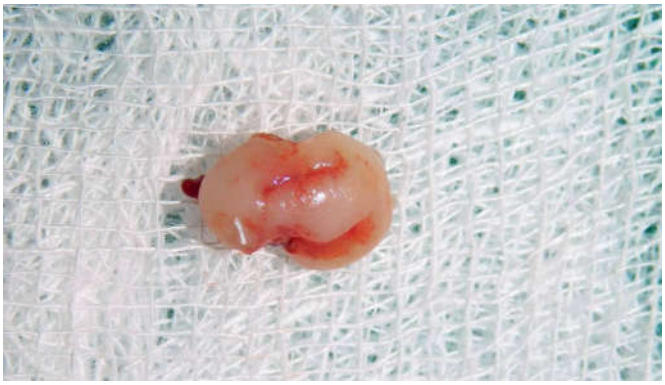

Fig 2 Excised Tissue

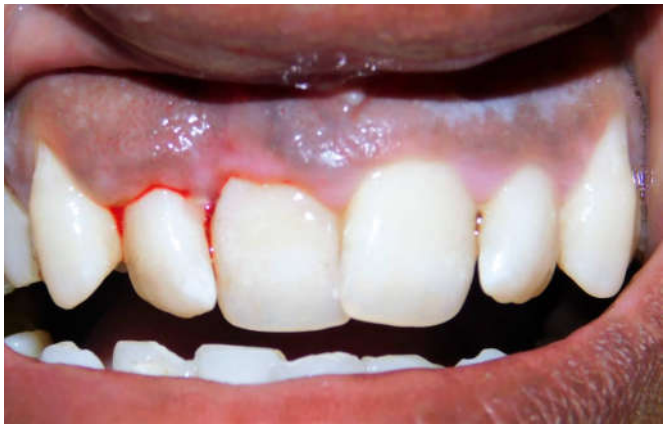

Fig 3 Post Operative

An excisional biopsy of the lesion was performed (FIGURE 2). A blunt dissection was performed to remove the lesion in one piece and the gross specimen was sent for histopathological examination to the Department of Oral and Maxillofacial Pathology. The post operative healing was uneventful (FIGURE 3).

Macroscopy: One soft tissue bit measuring 0.9 X 0.6 X 0.4 cm, white in colour, firm in consistency, smooth to irregular excised from the anterior gingiva (12,11 region) was sent in 10% formalin. The tissue was sectioned in two halves and both the halves were taken or processing.

Microscopy: The microscopic examination of H & E stained section of a soft tissue specimen shows hyperplastic hyperkeratinized stratified squamous epithelium with long and thin retepegs and intact connective tissue epifunction. The connective tissue is fibrocellular with moderate to dense inflammatory infiltrate predominantly composed of lymphocytes with vesiculated nuclei and numerous giant cells containing 5-8 nuclei, few budding capillaries, endothelial lined blood vessels and extravasated RBCs also seen. Few collagen bundles are also seen.

DISCUSSION

The PGCG is not a neoplasm, but rather a reactive lesion. PGCGs account for <10% of all hyperplastic gingival lesions. Proliferation of mononuclear and multinucleated giant cells with an associated prominent vascularity is found on the gingiva or alveolar ridge. It is seen in the young as well as in the elderly population with the highest incidence in the fourth to sixth decades of life.[21,22]

The preferential location of the lesion is premolar and molar zone, though Shafer, Giansanti and Waldron suggest that it generally occurs in the incisor and canine region. The lesions have been reported to be 2 times more common in females than males and more frequent in the mandible than the maxilla.[23,24]

The aetiology and nature of PGCG still remains undecided. The distinctive feature of PGCG is mainly due to excess number of giant cells that are disseminated in the connective tissue stroma. The exact basis of giant cells is uncertain.[10,23] In the past, several hypotheses had been proposed to explain the nature of multinucleated giant cells including the explanation that they were osteoclasts left from physiological resorption of teeth or reaction to injury to periosteum. There is strong evidence that these cells are osteoclasts as they have been shown to possess receptors for calcitonin and were able to excavate bone in vitro.[19]

The lesion was painless as it did not interfere with the occlusion, therefore, might not have been affected by traumatic forces. The consistency of the lesion is dependent on the age of lesions because with time, there is an increase in the collagen fibers, characterizing the mature lesion as being of a firm consistency instead of soft. In our case, the consistency was firm.

The etiology of this lesion is still not precisely defined, local irritating factors such as tooth expulsion, ill-fitting prosthesis, poor restorations, plaque, calculus, chronic infections or the effects of nutrients may play a vital role in the etiology.[17] Previously, the lesion was called peripheral giant cell reparative granuloma. However, its reparative effect has not

been proved yet, hence osteoclast activity seems doubtful.[25,26] The probable etiological factors in present case could be plaque, calculus.

There are no pathognomic clinical features whereby these lesions can be differentiated from other forms of gingival enlargement. The differential diagnosis of PGCG includes pyogenic granuloma, peripheral ossifying fibroma, and peripheral cemento.ossifying fibroma, all of which present with similar clinical and radiographic findings.

Another lesion, with very similar clinical and histological characteristics, is central giant cell granuloma. This is located within the jaw itself and exhibits more aggressive behavior. Only radiological evaluation can establish a distinction. Definitive diagnosis can be established through histopathologic examination.

Traditional treatment consists of local surgical excision down to the underlying bone,[1] for extensive clearing of the base.[21] Removal of local factors or irritants is also required. If the resection is only superficial, the growth may recur. Recurrence rate of PGCG varies between 5% and 70.6%, but it is generally accepted that the recurrence incidence for PGCG is approximately 10%.[27] These wide variations probably are related to the surgical technique utilized. Therefore to minimize the chances of recurrence wider excisions extending to the periosteum and including the entire base of the lesion are warranted. The high power diode laser is an excellent soft tissue surgical tool indicated for cutting and coagulating gingiva and mucosa.[28]

CONCLUSION

The PGCG is the most common giant cell lesion which can attain a large size and may follow an aggressive course so early and definitive diagnosis of the lesion on the basis of history clinical radiographic and histopathological examination allows conservative management with minimal risk to adjacent hard tissue.

Reference

1. Neville BW, Damm DD, Allen CM, Bouquot JE. "Soft tissue tumors," in Oral and Maxillofacial Pathology, B. W. Neville, D. D. Damm, C. M. Allen, and J. E. Bouquot, Eds., p. 485, WB Saunders, Philadelphia, Pa, USA, 4th edition, 2015.
2. Shields JA. Peripheral giant‐cell granuloma: A review. *J Ir Dent Assoc* 1994;40:39‐41.
3. Wood NK, Goaz PW. Differential Diagnosis of Oral and Maxillofacial Lesions. 5th ed. St.Louis: Mosby; 1997: 141-2.
4. Chaparro AAV, Berini AL, Gay EC. Peripheral giant cell granuloma. A report of five cases and reviewof the literature. *Med Oral Patol Oral Cir Bucal*. 2005; 10: 53-7.
5. Regezi JA SJJR. Oral Pathology: Clinical Pathologic Correlations. 4th ed. St. Louis: WB. Saunders; 2003: 112-3.
6. 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. *Av. Odontoestomatol* 2007; 23: 189-96.
7. Niloofar Shadman, Shahram Farzin Ebrahimi, Shahin Jafari, Mohammad Eslami. Peripheral Giant Cell Granuloma: A Review of 123 Cases. *Dent Res J* 2009; 6: 47-50.
8. Padam NT, Gupta SK, Gupta DS, Jurel SK, Abhishek S. Peripheral giant cell granuloma. *Contemp Clin Dent*. 2012; 3:118–21.
9. Neville BW, Damm DD, Allen CM, Bouquot JE. Soft tissue tumors. In: Neville BW, Damm DD, Allen CM, Bouquot JE, editors. *Oral and Maxillofacial Pathology*. 3rd ed. St. Louis: Saunders Publishers; 2009: 507‐63.
10. Mannem S, Chava VK. Management of an unusual peripheral giant cell granuloma: A diagnostic dilemma. *Contemp Clin Dent* 2012;3:93-6.
11. Motamedi MH, Eshghyar N, Jafari SM, Lassemi E, Navi F, et al. Peripheral and central giant cell granulomas of the jaws: a demographic study. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2007; 103:39–43.
12. Feyza OO, Bora O, Murat K, Kaan G, Omer G. Peripheral giant cell granuloma associated with dental implant: a rare case report. *Int J Oral Maxillofac Implants* 2009; 24:1153-6.
13. Adlakha VK, Chandna P, Rehani U, Rana V, Malik P. Peripheral giant cell granuloma. *J Indian Soc Pedod Prev Dent* 2010;28: 293-6.
14. Flaitz CM, "Peripheral giant cell granuloma: a potentially aggressive lesion in children," Pediatric Dentistry 2000; 22: 232–3.
15. Katsikeris N, Kakarantza-A, Angelopoulos A. "Peripheral giant cell granuloma. Clinicopathologic study of 224 new cases and review of 956 reported cases*," Int J Oral Max Surg* 1988; 17: 94–99.
16. Shafer WG, Hine MK, Levy BM. Textbook of Oral Pathology. 5th ed. Noida: W.B. Elsevier; 2007. 185-7.
17. Nedir R, Lombardi T, Samson J, "Recurrent peripheral giant cell granuloma associated with cervical resorption," *J Periodontol* 1997; 68: 381–4.
18. Osman AE, Ahmet ED, Mehmet B, Ebru A. The Peripheral Giant Cell Granuloma in Edentulous Patients: Report of Three Unique Cases. *Eur J Dent.* 2010; 4:329–33.
19. Ajiravudh S. Peripheral Giant Cell Granuloma : A case report and review literature. *KDJ* 2005; 8: 21-4 .
20. Rodrigues SV, Mitra DK, Pawar SD, Vijayakar HN. Peripheral giant cell granuloma: This enormity is a rarity. *J Indian Soc Periodontol* 2015;19: 466-9.
21. Kfir Y, Buchner A, Hansen LS. Reactive lesions of the gingiva. A clinicopathological study of 741 cases. *J Periodontol* 1980;51: 655‐61.
22. J. Philip Sapp, Lewis R.Eversole, George P.Wysocki. Contemporary oral and maxillofacial pathology. 2nd ed. China: Mosby; 2004.119-120.
23. Rajendran R. Benign and malignant tumors of the oral cavity. In: Rajendran R, Sivapathasundharam B, editors. Shafer's Textbook of Oral Pathology. 5th ed. New Delhi: Elsevier Publishers; 2006.113‐308.
24. Giansanti JS, Waldron CA. Peripheral giant cell granuloma: Review of 720 cases. *J Oral Surg* 1969;27: 787‐91.
25. Duarte AP, Gomes CC, Gomez RS, Amaral FR. Increased expression of NFATc1 in giant cell lesions of

the jaws, cherubism and brown tumor of hyperparathyroidism. *Oncol Lett* 2011; 2:571‑73.
26. Mannem S, Chava VK. Management of an unusual peripheral giant cell granuloma: A diagnostic dilemma. *Contemp Clin Dent* 2012; 3:93‑6.
27. Katsikeris N, Kakarantza‑Angelopoulou E, Angelopoulos AP. Peripheral giant cell granuloma. Clinicopathologic study of 224 new cases and review of 956 reported cases. *Int J Oral Maxillofac Surg* 1988; 17:94‑9.
28. Alam T, Dawasaz AA, Thukral N, Jangam D. Surgical diode laser excision for peripheral cemento‑ossifying fibroma: A case report and literature review. *J Oral Laser Appl* 2008;8:43‑9

How to cite this article:
Hiroj Bagde *et al* (2018) 'Peripheral Giant Cell Granuloma of Gingiva: A Case Report', *International Journal of Current Advanced Research,* 07(4), pp. 11932-11935. DOI: http://dx.doi.org/10.24327/ijcar.2018.11935.2084

****