PERIPHERAL GIANT CELL GRANULOMA: A CASE REPORT

ABSTRACT

Peripheral giant cell granuloma (PGCG) is a non neoplastic reactive lesion of the gingiva, originating from the periosteum or periodontal membrane following local irritation or chronic trauma. PGCG manifests as a red-purple growth located in the gingiva or edentulous alveolar margins. The lesion can develop at any age, shows a slight female predilection. Usually, they cause one or the other problem in eruption or alignment of teeth, but may also present without disturbing the normal occlusion or eruption pattern. Management of these teeth depends on the symptoms. Presented here is a case of PGCG in relation to the lower right first premolar in a 10 year old child.

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KEYWORDS

Peripheral giant cell granuloma. Giant-cell epulis. Giant cell hyperplasia.

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INTRODUCTION

Peripheral giant cell granuloma (PGCG) is a reactive, exophytic lesion of the oral cavity, also known as giant-cell epulis, osteoclastoma, giant cell reparative granuloma, or giant cell hyperplasia. It 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.[1,2]. Although the pathogenesis of oral cavity PGCGs is still uncertain, local irritants such as calculus, bacterial plaque, periodontitis, periodontal surgery, ill-fitting dentures, overhanging restorations and tooth extractions are suggested as the etiological causes. Since the periosteal region of the jaw is the most exposed site for the development of chronic inflammation through trauma, irritants and infections, it is not easy to determine the exact cause favoring the development of lesion[1-4].

It is more frequent in women than in men, with a slightly higher prevalence in the 30-to 70-year-old-age group, and affects largely the lower jaw (55%) than in the upper jaw[2]. Cases of PGCG have been documented in children, where the lesion appears to be more aggressive, with absorption of the interproximal crest area, displacement of the adjacent teeth and multiple recurrences.[3,4]

Clinically, it manifests as a soft to firm, sessile or pediculate mass, which is predominantly bluish red with a smooth shiny or mamillated surface, localized in the marginal gingival tissue,interdental papilla or mucosa over edentulous ridges[5,6]. According to Pindborg the preferential location is the premolar and molar zone.[5]

The lesion ranges in size from small papules to enlarged masses, though reportedly rarely exceeding 2 cm in diameter. Growth in most cases is induced by repeated trauma. It is basically asymptomatic,pain is not a common characteristic, but may be associated with pain if the lesion ulcerates or becomes infected[7,8].

These are soft tissue lesions that rarely affect the underlying bone, though the latter may suffer erosion which can be appreciated in radiographs[9,10].

Biopsy and histopathology is the gold standard in the diagnosis of PGCG.Histologically, the presence of multinucleated giant cells is characteristic of this lesion, and various stages in giant cell evolution from formation to degeneration have been described. Multinucleated giant cells may represent a reaction to unknown stimuli[4-6].

Treatment comprises surgical resection, with extensive clearing of the base of the lesion to avoid relapses.[1,4]

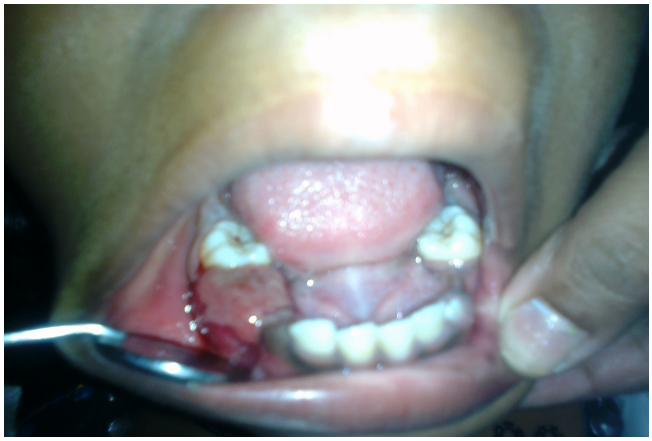
CASE REPORT

A 10-year-old girl reported to Kannur Dental College with c/o swelling right lower jaw. The swelling was noticed 3 months back and had gradually increased in size. It was

asymptomatic. Patient also gives a history of exfoliation of first and second deciduous molars few months back.

On intraoral examination a solitary exophytic mass was noted in the right mandibular alveolar ridge.The lesion extended anteriorly from the canine region to the premolar region posteriorly.Measured approximately 3 x 4 cm in size. The overlying mucosa was normal in color, with a reddish tinge at its base and sides (Figure 1). No secondary changes were noted. On palpation it was non-tender, soft to firm in consistency and sessile. The teeth 45 and 35 were missing.

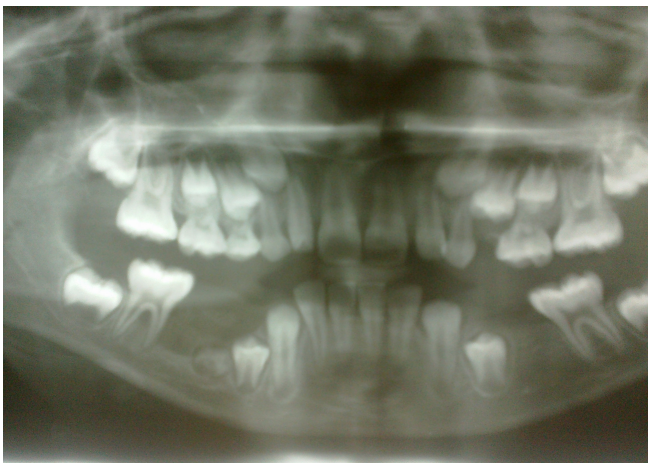
Figure 1. PGCG localised distal to lateral incisors.



Based on the history and clinical features we arrived at the following differential diagnosis (1) Peripheral giant cell granuloma, (2) Pyogenic granuloma, (3) Peripheral ossifying fibroma.

Panoramic radiograph revealed incompletely formed root of 44 and underdeveloped tooth bud of 45. Cup shaped bone resorption extending from first premolar region to the mesial side of first molar was noted (Figure 2).

Figure 2. OPG showing bone loss.



An incisional biopsy was done and sent for histopathology. The histopathology reports were suggestive of Peripheral Giant Cell Granuloma. Based on the final diagnosis the following treatment was planned and performed.

Under local anesthesia, lesion was completely excised The underdeveloped bud of 45 was removed (Figure 3). Underlying bone was curetted well and smoothened. Sutures were then placed.

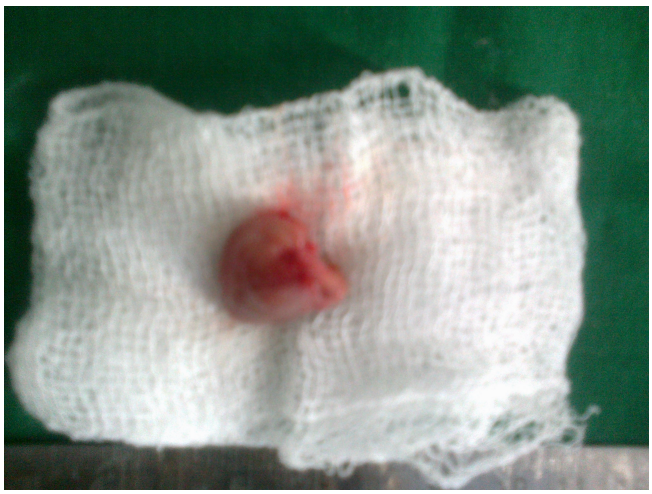
On review after a week the wound had healed satisfactorily.On review after 6 months there was no recurrence of the lesion

DISCUSSION

The PGCG is an exophytic lesion of the oral cavity that seems to arise from the periodontal ligament or periosteum and affects

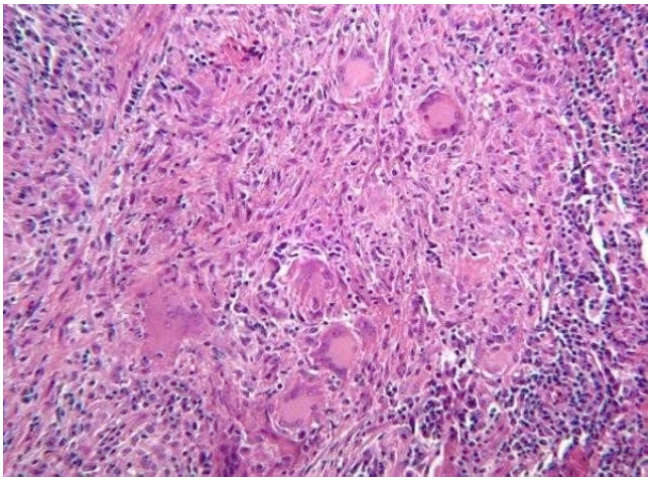
mainly the gingival or alveolar mucosa of dentate and edentulous persons [1-4].The local irritating factors like teeth extraction, poor restoration, food impaction, calculus, ill fitting dentures and plaque are said to be the etiologic factors, though exactly not known[4]. A possible hormonal (Estrogen & progesteron) influence for some Peripheral Giant Cell Granuloma has been postulated [8].These hormones have immunosuppressive actions which contribute to growth of lesions. Hormonal changes on approching puberty and poor oral hygiene seemed to be predisposing factors in our patient. Peripheral Giant Cell Granuloma causes cupping resorption of the underlying alveolar bone[9,10]. We noticed a similar radiographic appearance in this case.

Figure 3. Excised lesion.



Presence of multiple giant cells in various stages of development is the typical histopathologic appearance in PGCG[4-6]. The typical appearance was noted on histopathology in our case (Figure 4) based on which a final diagnosis of PGCG was made.

Figure 4. Histological appearance of peripheral giant cell granuloma.



Treatment is simple conservative excision of lesion with removal of any local source of irritation[11,12] Bhasker et al reported recurrence rate of 12%, Katsikeris et al[6] reported 9.8% of recurrence rate and Zhang W et al[11]on other hand reported a rate of 70.6%.[9]

A similar treatment was performed in our patient , and was reviewed after 3 months with no recurrence seen . But the patient has to be reviewed further to check for recurrences.

CONCLUSION

An exophytic mass in the oral cavity is a reason for concern and is clinically difficult to diagnose. The lesion closely resembles lesions like pyogenic granuloma, peripheral ossifying fibroma and fibroma.

Hence a histopathological examination of the tissue specimen is mandatory for

confirming the diagnosis. Complete surgical excision along with its base and elimination of irritating factors is important to prevent recurrences.

In conclusion, we would like to emphasize all exophytic masses in the oral cavity should be diagnosed early and histopathology is an important tool in the diagnosis.

If diagnosed as PGCG the appropriate treatment should be done at the earliest to prevent bone loss and recurrences of the lesion.

REFERENCES

1.Cooke BED. The fibrous epulis and the fibroepithelial polyp:Their histogenesis and natural history. Br Dent J 1952;93:305-9.

2. Flaitz CM. Peripheral giant cell granuloma: a potentially aggressive lesion in children. Pediatr Dent 2000;22(3):232–3.

3. Brown GN, Darlington CG, Kupfer SR. A clinico-pathologic study of alveolar border epulis with special emphasis on benign giant cell tumor. Oral Surg 1956;9:765-5, 888-901.

4. Shafer WG, Hine MK, Levy BM. A text book of oral pathology. Philadelphia: WB Saunders Company; 2009.

5. Neville BW. Oral and maxillofacial pathology. 2nd ed. Philadelphia: WB Saunders Company; 2002.

6. Katsikeris N, Kakarontza A, 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.

7. Al-Khateeb TH. Benign oral masses in a northern jordanian population-a retrospective study. Open Dent J 2009;28:147–53.

8. Whitaker SR, Bouquot JE. Identification of estrogen and progesterone receptors in peripheral giant cell lesions of the Jaws. J Periodontol 1994;65(3):280-3.

9. Awange DO, Wakoli KA, Onyango JF, Chindia ML, Dimba EO, Guthua SW. Reactive localised inflammatory hyperplasia of the oral mucosa. East Afr Med J 2009;86:79–82.

10 . Dayan D, Buchner A, Spirer S. Bone formation in peripheral giant cell granuloma. J Periodontol 1990;61(7):444-6.

11. Zhang W, Chen Y, An Z, Geng N, Bao D. Reactive gingival lesions: a retrospective study of 2,439 cases. Quintessence Int 2007;38:103–10.

12. Gordón-Núñez MA, de Vasconcelos Carvalho M, Benevenuto TG, Lopes MF, Silva LM, Galvão HC. Oral pyogenic granuloma: a retrospective analysis of 293 cases in a Brazilian population. J Oral Maxillofac Surg 2010;68:2185–8.