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Case Report

Peripheral giant cell granuloma: A case report

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ABSTRACT

Peripheral giant cell granuloma (PGCG) is a benign and reactive hyperplastic lesions, originating from the periosteum as a result of local irritation. It is the most common giant cell lesion of oral cavity and also called "giant cell epulis." Because of its high growth potential, it is more invasive and may involve adjacent interdental cortical plate. In case of PGCG, diagnosis is based on histological analysis which precedes its management. Surgical excision should remove the lesion completely with its base for its rapid penetrating nature and to prevent recurrence. This paper reports a case of PGCG at the mandibular anterior region lingually with histological diagnosis and surgical management.

Keywords: Giant cell epulis, Gingival overgrowth, Peripheral giant cell granuloma

INTRODUCTION

Gingival overgrowth can be generalized or localized which is commonly seen in clinical practice and share similar clinical characteristics that arise difficulty in the diagnosis. Localized gingival overgrowth is of various types and the most frequent one is peripheral fibroma, pyogenic granuloma, peripheral ossifying fibroma, and peripheral giant cell granuloma (PGCG).[1,2] A chronic irritation from plaque and calculus, faulty restorations, and ill-fitting prosthesis stimulates host reactive response and produce granulation tissue along with endothelial cells, chronic inflammatory mediators, and proliferation of fibroblasts that leads localized gingival overgrowth.[3,4] These tumor-like lesions are benign; however, they have the ability to repair (i.e., formation of scars) following injury as a result of chronic inflammatory process.[5,6]

PGCG is one of the most prevalent giant cell lesions of the jaws that originate from the connective tissue of the periosteum.[7] Other names for PGCG are peripheral giant cell tumor, osteoclastoma, reparative giant cell granuloma, giant cell epulis, and giant cell hyperplasia of the oral mucosa.

Clinically, it appears as a solitary purplish-red, hemorrhagic, and pedunculated lesion involving the interdental papilla, edentulous alveolar margin, or at the marginal gingival level with or without surface ulceration,[7-11] and radiographically it exhibits "cuffing appearance".[3]

Histologically, PGCG consists of numerous multinucleated osteoclast-like giant cells with highly cross-linked fibrillar connective tissue stroma. It is a non-encapsulated mass with high vascularization with the presence of ovoid or spindle shaped young fibroblasts and bone trabeculae due to multiple foci of bone formation.[3,12]

As it is more invasive and has high chance of recurrence (10–15%) after surgical excision, it is recommended to completely remove the lesion along with removal of local irritating factors.[3]

CASE REPORT

A 18-year-old male patient reported to the Department of Periodontics, Career Postgraduate Institute of Dental Sciences and Hospital, Lucknow, U.P. India, with a chief complain of swelling in the lower anterior lingual region of jaw for 3 months. The patient reported with gradual increase in size of the lesion for the past 20 days. There was no history of trauma, fever, loss of appetite, and loss of weight. The patient was systemically healthy. Patient did not give any family history.

The intraoral examination revealed localized gingival overgrowth which was painless, purplish-red, hemorrhagic, and pedunculated lesion in relation to 41, 43, and 44, extending from the interdental papilla on the lingual aspect of mandibular right anterior region [Figure 1]. On palpation, the lesion was resilient in consistency and there was no blanching found after applying digital pressure. There was Grade II mobility in 41, 43, and 44. The growth was asymptomatic and on palpation, the lesion was soft with tendency to bleed. There was no history of trauma. There was no relevant medical history. There was no abnormality detected regarding facial asymmetry and lymph nodes were non-palpable.

Radiographic examination revealed bone loss i.r.t. 41, 43, and 44 [Figure 2]. Routine blood investigations were within normal range. Based on the patient history, clinical, and radiographic findings, a provisional diagnosis was made as PGCG.

Treatment included Phase I periodontal therapy and surgical excision of the growth. A written consent was obtained from the patient. Scaling and root planing was performed. After 14 days of Phase I therapy, surgical excision was performed by administering local anesthesia (2% lignocaine hydrochloride with 1:200000 epinephrine), external bevel gingivectomy with scalpel was performed to completely remove the growth with its base in the mandibular arch and the area was curetted. The tissue with 10 mm in length and 15 mm in width was excised [Figure 3a and b]. Histopathological analysis of the excised tissue was done for confirmation of the diagnosis.

The patient was advised to rinse with 0.2% chlorhexidine gluconate for 2 weeks. Post-operative instructions were given and analgesics (Diclofenac 50 mg twice daily for 5 days) and antibiotic (amoxicillin 500 mg thrice daily for 5 days) were prescribed.

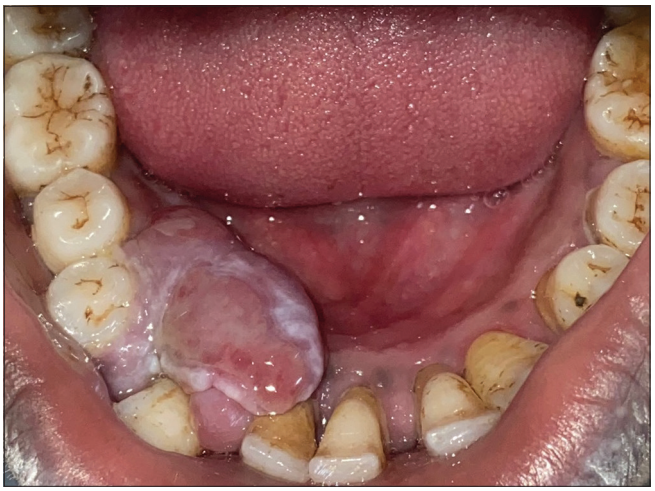

Figure 1: Intraoral view of gingival overgrowth seen lingually involving interdental papilla between 41, 43, and 44.

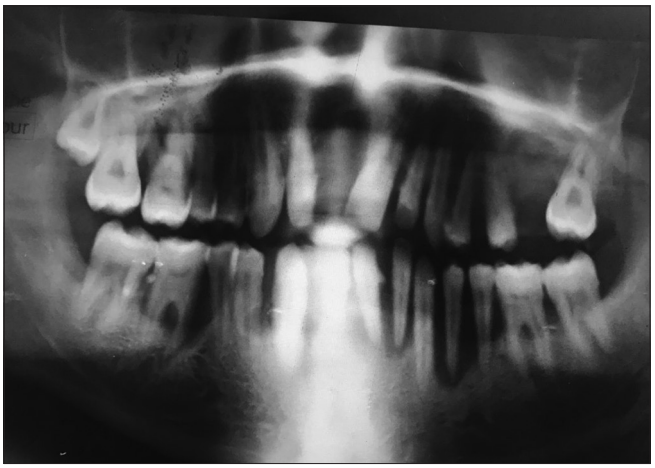

Figure 2: OPG.

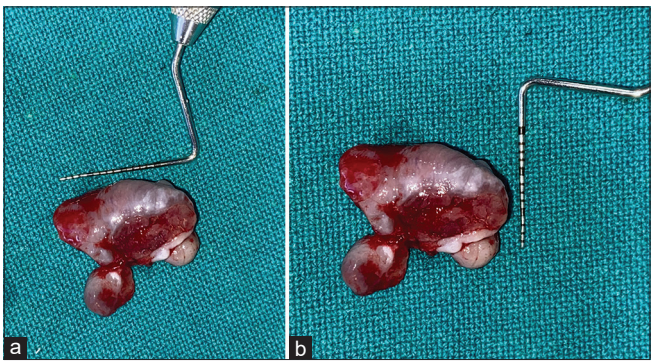

Figure 3: (a) Mesiodistal dimension of growth tissue: 15 mm and (b) apicocoronal dimension of growth tissue: 10 mm.

The histological evaluation showed hyperplastic stratified squamous epithelium with ulceration and multiple numerous foci of giant cells in connective tissue stroma. There was also numerous young fibroblasts and diffuse

chronic inflammatory cells throughout the lesions [Figure 4a and b].

Post-surgical healing was uneventful. The patient was recalled after 1 week for evaluation, and irrigation of the area with Betadine (5%) was done. The patient was kept on follow-up for further evaluation [Figure 5].

DISCUSSION

PGCG is a benign lesion with exophytic growth and initially named as Giant cell reparative granuloma by for its reparative nature.[13,14] Giant cell granuloma can be central giant cell granuloma (intraosseous) and peripheral PGCG (soft-tissue lesion or extraosseous).[15] The PGCG commonly seen in mixed dentition stage; however, it occurs throughout life with high incidence in the age group of 30–40 years.[14] It is more common among females (60%). The mandible is more commonly affected than maxilla.[10] Lesions can become large with time up to 2 cm in size. Although there is clinical similarity with pyogenic granuloma, PGCG attains more bluish purple color compared to pyogenic granuloma that is bright red in color. Radiographically, unilocular or multilocular radiolucency may be present with well-defined or ill-defined margins giving it cuffing appearance and with expansion of cortical plates.[16,17]

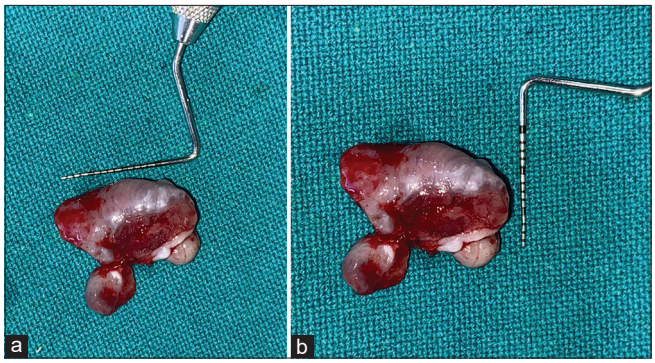

Figure 4: (a) Histopathologic section of superficial tissue and (b) histopathologic section of deeper tissue.

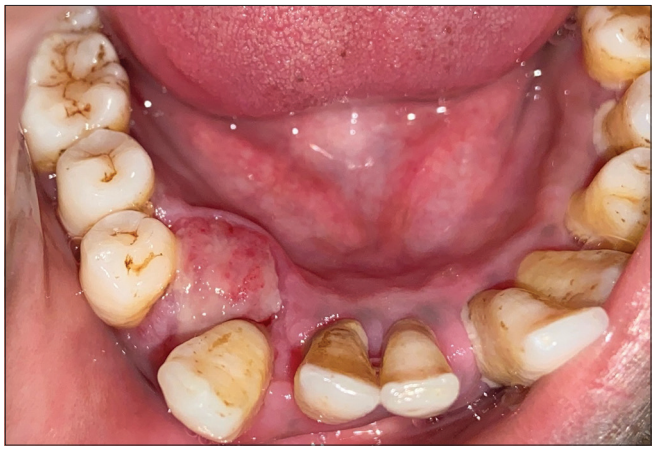

Figure 5: Post-operative after 10 days.

However, there is similarity in clinical presentations with other enlargements, the histopathological analysis confirms PGCG. The microscopic features of the present case were classic of PGCG.

Due to its high recurrence rate (5.0–70.6%, average 9.9%), complete excision of the lesion along with its base is the treatment of choice along with the elimination of the underlying etiologic factors. It has been suggested that in addition to the excision to remove the base of the lesion, curettage should also be performed.[18]

CONCLUSION

An accurate diagnosis is essential for the management of gingival overgrowth which can be made through clinical, radiographic, and histopathological examination. PGCG has a nature of rapid growth pattern and it arises from connective tissue involving the periosteum, there is a high tendency of bone resorption which may cause destruction of periodontal structure resulting into tooth movement. The treatment is surgical excision of the growth with its base and control of etiologic factors to minimize the rate of recurrence. Regular post-operative follow-up with preventive measures should be implicated.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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