Case Report

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# Peripheral Giant Cell Granuloma-A Reactive Lesion: Case Report

**Abstract:**

Gingival overgrowth commonly seen in clinics can be categorized as generalized or localized. Peripheral giant cell granuloma (PGCG) is tumor like, non-neoplastic reactive intra-osseous lesion occurring in the gingiva or alveolar mucosa and is characterized by an un-encapsulated proliferation of mononuclear polygonal cells which are spindle-shaped with osteoclast-type multinucleated giant cells in a vascular background. This is a case report of 28 year old female with peripheral giant cell granuloma in mandibular anterior region. The lesion was completely excised to the periosteum level and no recurrence was seen in 1 month follow up.

**Key-words:** Peripheral giant cell granuloma, gingival overgrowth, reactive lesion

## Introduction:

Gingival overgrowth commonly seen in clinics can be categorized as generalized or localized. Since it presents comparable clinical features, hence causing inconvenience in the diagnosis. The most prevalent localized gingival overgrowth is pyogenic granuloma, peripheral ossifying fibroma, peripheral fibroma, and peripheral giant cell granuloma (PGCG).[1] These may develop normally in response to chronic irritation from calculus and plaque, ill-fitting prosthesis and faulty restorations.[2]

Peripheral giant cell granuloma (PGCG) is tumor like, non-neoplastic reactive intra-osseous lesion occurring in the gingiva or alveolar mucosa and is characterized by an unencapsulated proliferation of mononuclear polygonal cells which are spindle-shaped with osteoclast-type multinucleated giant cells in a vascular background.[3] This lesion does not exhibit as a true neoplasm, but presents as reactive in nature. Local irritation or traumais believed to be the initiating stimulus, but the etiology is still unclear.[4]

Clinically, PCGC is a solitary hemorrhagic, pedunculated lesion, purplish-red in color and may or may not have surface ulceration. It may involve the edentulous alveolar margin, interdental papilla, or at the marginal gingival level. Radiographically it exhibits "cuffing appearance"[2, 5]. Also it may penetrate interdentally to involve adjacent cortical bone resulting in teeth separation.

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## Case Report:

A 28-year-old female 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 left front region of jaw for 1 month which gradually increased in size. The patient was systemically healthy and have no relevant familial and medical history. The patient gave no history of trauma or fever. Lymph nodes were non-palpable and facial asymmetry showed no abnormality.

On clinical examination localized gingival overgrowth was seen which was painless, sessile, lobular hemorrhagic,

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purplish-red, and pedunculated lesion in respect to 32 and 33, extending from the interdental papilla on the facial aspect of mandibular left anterior region [Figure 1]. On palpation, the consistency of the lesion was lesion resilient. No mobility in 32, and 33 was seen.

Routine blood investigations including Complete blood count, bleeding time/ clotting time and Random blood sugar were within normal range.

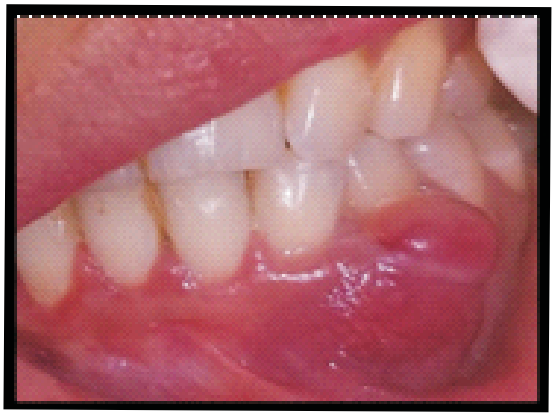

Figure 1

## Radiographic Evaluation:

Intra oral periapical radiograph showed angular radiolucency showing intra bony defect irt 33 [Figure 2 a].

Axial section of CBCT revealed deep inter-dental vertical bone defect involving proximal bone and adjoining buccal cortex from alveolar crest to mid-apical level indicating localized periodontitis with two-wall defect.[Figure 2 b]

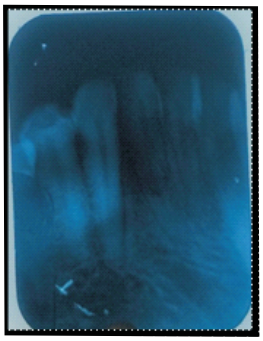

Figure 2 a

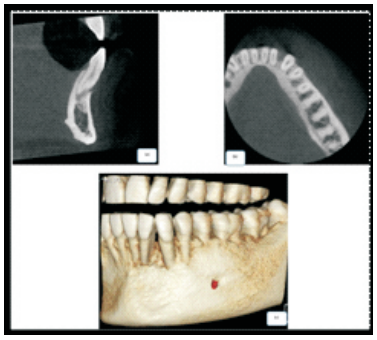

Figure 2 b

According to patient's history, clinical diagnosis and radiographic evaluation differential diagnosis of Pyogenic granuloma, Peripheral Giant cell granuloma, Central giant cell granuloma, Peripheral Ossifying fibroma made was.

In order to make definitive diagnosis histopathological analysis of the excised tissue was done.

## Procedure:

After obtaining the written informed consent from the patient surgical excision of the growth was planned. Following the administration of local anesthesia (2% lignocaine hydrochloride with 1:200000 epinephrine),surgical excision was performed with scalpel to completely remove the growth with its base in the mandibular arch.Subsequently the area was curetted. The tissue with 8 mm in length and 5 mm in width was excised and sent for biopsy. [Figure 3aand b].

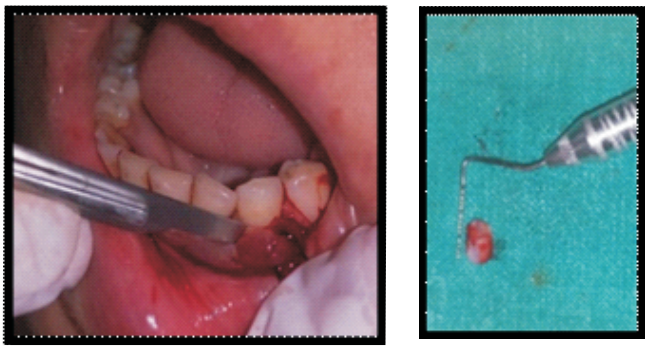

Figure 3a and b

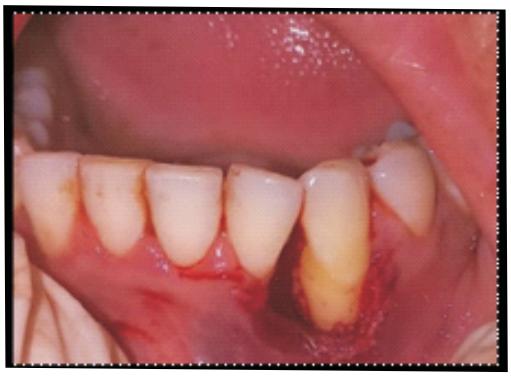

Figure 4

Analgesics (Diclofenac 50 mg twice daily for 5 days) and antibiotic (amoxicillin 500 mg thrice daily for 5 days) were prescribed post-operatively to the patient and was advised to rinse with 0.2% chlorhexidinegluconate for 2 weeks.

Microscopically hyperplastic stratified squamous epithelium and inflamed connective tissue stoma was seen. Multiple foci of giant cells in deeper tissue of connective tissue stroma was also present. Neo- angiogenesis was also noted and blood capillaries are engorged with RBCs and moderately collaginized stroma is apparent. [Figure 5]

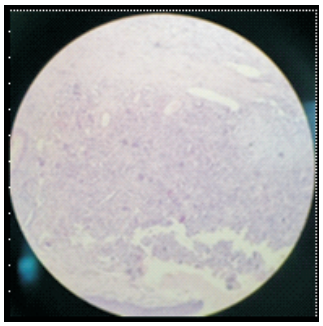

Figure 5

4th day postoperatively the patient reported to the department with the reoccurrence of the granuloma. [Figure 5] Then the area was profusely irrigated with saline and granulomatous tissue was removed. [Figure 6] Patient was asked to take medications for further 3 days and kept for follow up.

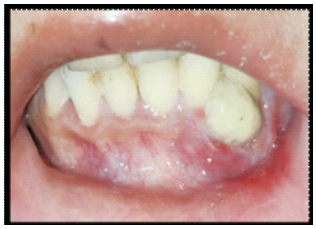

Figure 5

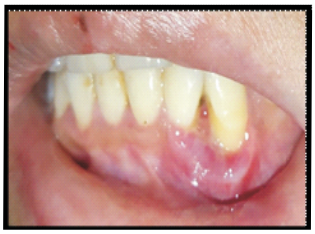

Figure 6

Patient was revaluated and reported no regrowth after 10 days

For further evaluation the patient was kept on follow up and no recurrence was reported in 1 month.

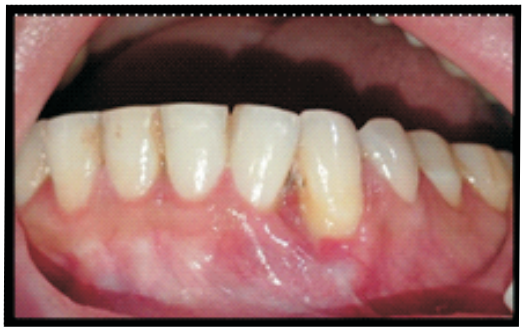

Figure 7

## Discussion:

PGCG, initially named as Giant cell reparative granuloma is a, benign exophytic lesion.[6] The etiology PGCG (giant cell epulides) is unclear but chronic local irritants is thought to be most common cause. [5 7] PGCG can occur at any age but is very common in the fourth to sixth decade of life. It is more frequent in females (65%) than in males (35%).[2] Tyagi et al. in 2011stated that the maxillary to mandibular site preference ratio of PCGCto be 1:4.[10]

The incidence rate of PGCG varies from 5.1% to 43.6% amongst all the reactive oral lesions.[8]However Buchner et al.[9] in his reportstated that PGCG was the least common lesion among all the reactive lesions, equating to about 1.25% of all the biopsies included in his study.

PCGC is manifested as painless, soft, nodular massclinically similar to pyogenic granuloma, but it is more bluish purple color whereas pyogenic granuloma is bright red in color.The lesion is generally asymptomatic; but, recurrent trauma caused by occlusion can lead to its growth. These lesions can grow up to 2 cm in size with time. Radiographically, PCGC presents with multilocularor unilocular radiolucency with ill-defined or well-defined margins which gives it “cuffing appearance” with extension of cortical plates.[11 12]

There are variety of other lesions that mimics PGCG hence differential diagnosis of PGCG holds importance; and these lesions are associated with a variation in their treatment and their prognosis. This band of proliferative gingival overgrowths comprises of pyogenic granuloma, CGCG, hemangioma, metastatic carcinomas, and peripheral ossifying fibroma (POF).[13]

Histopathological analysis shows the existance of hyperplastic parakertinized stratified squamous epithelium.3 main features of histopathology of PGCG are: Presence of numerous young proliferating fibroblasts, vascularized fibro-cellular stroma with numerous capillaries and abundant multinucleated giant cells.[14]

In various epidemiologic studies recurrence rate of 5.0-70.6% (average 9.9%) has been described.[15] Giansanti and Waldron[16] reported a recurrence rate of 5% while Eversole and Rovin[17] showed a recurrence of 11%. Lack of involvement of the periodontal ligament or periosteum in the excised tissue might be the reason for recurrences.[18]

Surgical removal of the lesion down to the bone is the most common treatment of PCGC. The lesion is eliminated using various methods ranging from conventional blade, an electric scalpel to cryosurgery using cryoprobeor liquid nitrogen and lasers. Adjacent teeth, are thoroughly by scaled and root planed (SRP) to remove any possible source of irritation. If the periodontal membrane is affected, removal of the adjacent teeth is required for full resection, however this is primarily contraindicated.[19]

## Conclusion:

An accurate diagnosis which includes clinical, radiographic, and histopathological examinationis crucial for the management of PGCG. PGCG has high recurrence rate and it results from connective tissue including the periosteum and bone resorption leading to destruction of periodontal structure. The best treatment option is complete surgical excision of the growth from its base with curettage and control of causative factors to reduce the rate of recurrence. Constant post-operative follow-up with precautionary measures should be implied.

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