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## PERIPHERAL GIANT CELL GRANULOMA

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### ABSTRACT

The most frequent non-neoplastic lesion on the gingiva/alveolar crest is Peripheral Giant Cell Granuloma (PGCG), also known as "Giant Cell Epulis." It is a local hyperplastic reaction to injury or inflammation. Clinically, it resembles pyogenic granuloma, peripheral ossifying fibroma, and a variety of other oral cavity peripheral lesions. A purplish-red soft tissue nodule with multinucleated large cells is the most common symptom.

This article reports a case of peripheral giant cell granuloma in a 36 years old female patient. The patient had reported with a chief complaint of swelling in the left lower back region of the jaw since 5 months. The lesion was removed and histopathology confirmed the diagnosis of Peripheral Giant Cell Granuloma. The 12-month clinical follow-up revealed uneventful soft issue healing. Early and definitive identification, based on clinical, radiologic, and histopathologic assessment, is critical for conservative care of such lesions, reducing the risk of damage to nearby hard tissue structures.

**Key Words** - Peripheral Giant Cell Lesions, Central Giant Cell Lesions, Gingiva

## INTRODUCTION

PGCG is an infrequent, inflammatory, hyperplastic, exophytic lesion of the oral cavity, also known as giant cell epulis, osteoclastoma, giant cell reparative granuloma, or giant cell hyperplasia. It usually occurs as a result of local irritating factors such as bacterial plaque, periodontitis, periodontal surgery, tooth extraction, poor dental restorations, food impaction, ill-fitting dentures, xerostomia, hormonal influence and systemic condition like hyperthyroidism.<sup>1,2</sup>

PGCG may occur at any age but exhibits a peak incidence between 40 and 60 year of age.<sup>1</sup> Women are affected more than men, approximately 60% of cases occur in women. The lesion may arise in both anterior and posterior regions of the gingiva or alveolar ridge; mandible is more affected than maxilla.<sup>3</sup>

Clinically PGCG can present as polypoid or nodular lesion that is primarily bluish red with a smooth shiny or mamillated surface, stalky or sessile base and is well demarcated. Pain is rare and in most cases the lesion is induced by constant trauma.<sup>1</sup> Differential diagnosis of peripheral giant cell granuloma includes lesions with very similar clinical and histopathological features such as CGCL, inflamed irritation fibroma, pyogenic granuloma, peripheral ossifying fibroma and hemangioma.<sup>3,4</sup>

## CASE REPORT

A 36 years old female patient reported at the OPD of Department Periodontology Subharti Dental College and Hospital, Meerut with a chief complaint of swelling and pain while chewing in left lower back tooth region since 5 month. Patient gave the history of extraction 6 months back. Intraoral examination revealed a raised, round, sessile, smooth-edged solitary mass of 15x10 mm extending from distal to second premolar on the left mandibular edentulous gingiva obliterating the buccal vestibule without tendency to bleed (Fig.1). The patient's general hygiene was good without slight accumulation of plaque and calculus. She was systemically healthy and was not taking any medication. Radiological examination revealed no evidence of bony involvement (Fig.2).

After initial periodontal treatment, an excisional biopsy of the lesion was performed till the periosteum level under local anaesthesia (Fig.3). The excised lesion was embedded in 10% formalin and sent for histopathological examination (Fig.4). The microscopic features of the lesion were consistent with that of

PGCG. A large number of stromal fibroblastic cells and multinucleated giant cells were seen (Fig.5) Postoperative healing was uneventful. No sign of recurrence was seen 12 months after surgery (Fig.6,7).

## DISCUSSION

The present case of PGCG was successfully treated with excision and curettage. Clinical 12 month follow up revealed no recurrence and highlighted that the chosen surgical management along with the proper maintenance of oral hygiene were adequate to treat PGCG and prevent its recurrence.<sup>5</sup>

The lesion was given the name "Peripheral giant cell reparative granuloma" by Bernier and Cahn. The latter phrase is currently not in use because the lesion's reparative nature has yet to be established. The phrase peripheral giant cell granuloma is now widely used.<sup>6</sup>

The cause and nature of PGCG are currently unknown. In the past, many hypotheses have been proposed to explain the proliferation of giant cells as the exact origin remains unclear: osteoblasts, phagocytes reacting to haemorrhage, endothelial cells, spindle-shaped mesenchymal cells, foreign body cells and osteoclasts.<sup>7</sup> Giant cells are thought to represent osteoclasts left over after the normal resorption of deciduous teeth. Giant cells, according to some writers, may simply be a reactive component of the lesion, formed from mononuclear cells derived from the bone marrow. Giant cells have membrane receptors for calcitonin, which characterises osteoclast activity, as shown by immunohistochemistry. Another possibility is that they are formed by mononuclear cells from the phagocytic system.<sup>3</sup>

Differential diagnosis of PGCG holds importance as there is a variety of other lesions that mimics PGCG. The spectrum of focal proliferative growths occurring on gingival tissue that share a close resemblance involves giant cell tumour, non-ossifying fibroma which differs from PGCG lesions in consistency and colour, Central Giant Cell Granuloma which is an expansive and destructive intra osseous lesion that can perforate the cortex. Another lesion mimicking PGCG is Pyogenic Granuloma, generally difficult to distinguish from PGCG. Chondroblastoma is mostly localized in the gum and may provoke irregular bone destruction below the exophytic lesion. Odontogenic cyst which is frequently associated with a necrotic tooth or with periodontal disorder; haemangioma cavernosum, is distinguished from PGCG lesions by their pulsatile nature and fissured epulis.<sup>4,8</sup>

The peripheral ossifying fibroma is a reactive gingival development with clinical characteristics similar to PGCG. Despite the fact that this reactive lesion is frequently ulcerated and inflammatory, it does not have the purple or blue colouring characteristic with PGCG. Identification of small flecks of calcification on a radiograph aids in diagnosis of peripheral ossifying fibroma.<sup>9,10</sup>

Local surgical resection of the lesion with the suppression of the underlying etiologic factors is regarded as the most suitable approach for treatment PGCG.<sup>4</sup> The periosteum must be included in the excision to prevent recurrences; in fact recurrence is frequent and is observed in 5% and 11% of cases according to Eversole and Mighell.<sup>11</sup> Relapses occur due to inadequate surgical technique, mainly due to lack of effective curettage of the periosteum subjacent to the lesion or due to small portions of the lesion that remain within the tissues and proliferate afterwards

## CONCLUSION

PGCG is a routinely encountered, giant cell lesion of the oral cavity. However, there is a lot of uncertainty about this entity's histogenesis, aetiology, and other characteristics. A definite diagnosis of PGCG on the basis of clinical, radiographical, and histopathological examination allows clinicians to do conservative management with minimal risk to the adjacent hard tissue.

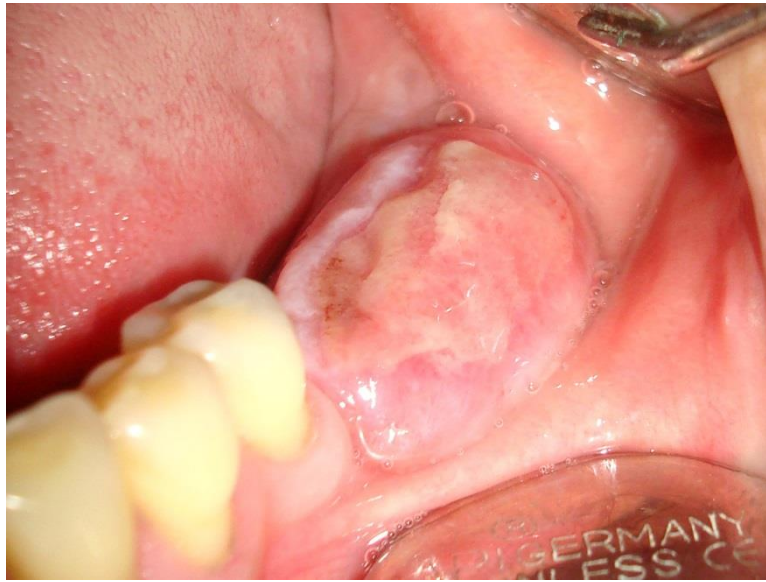
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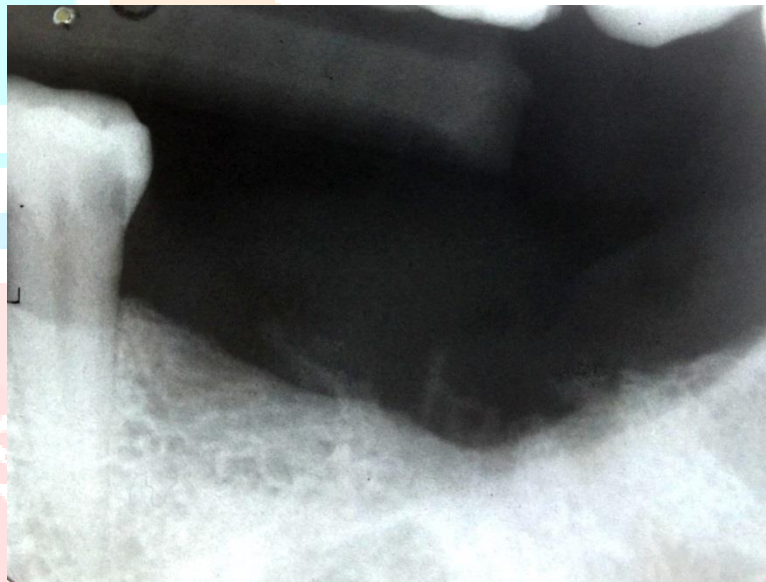
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### Legends to Figures

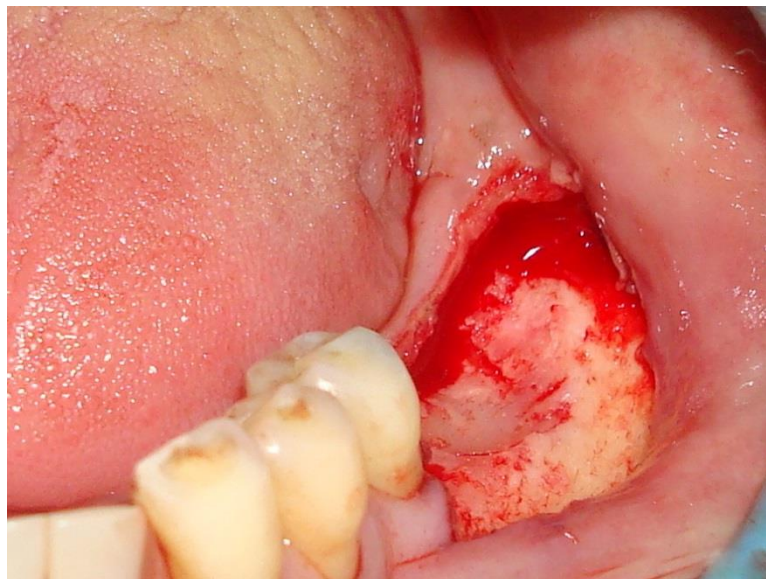
<b>Fig 1</b>	<b>Pre-Operative View</b>
<b>Fig 2</b>	<b>Pre-operative RVG</b>
<b>Fig 3</b>	<b>Excision Done</b>
<b>Fig 4</b>	<b>Excised tissue</b>
<b>Fig 5</b>	<b>Microscopic view of the lesion</b>
<b>Fig 6</b>	<b>After 12 months</b>
<b>Fig 7</b>	<b>RVG After 12 months</b>



**Fig 1**



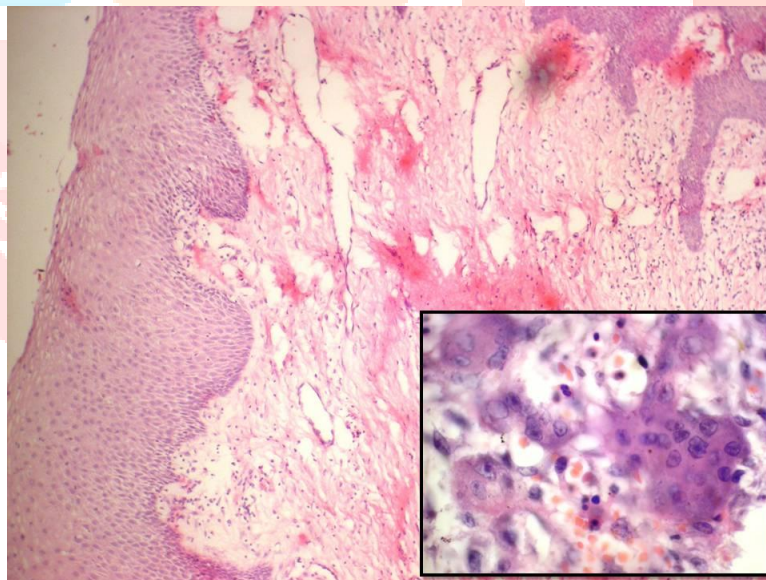
**Fig 2**



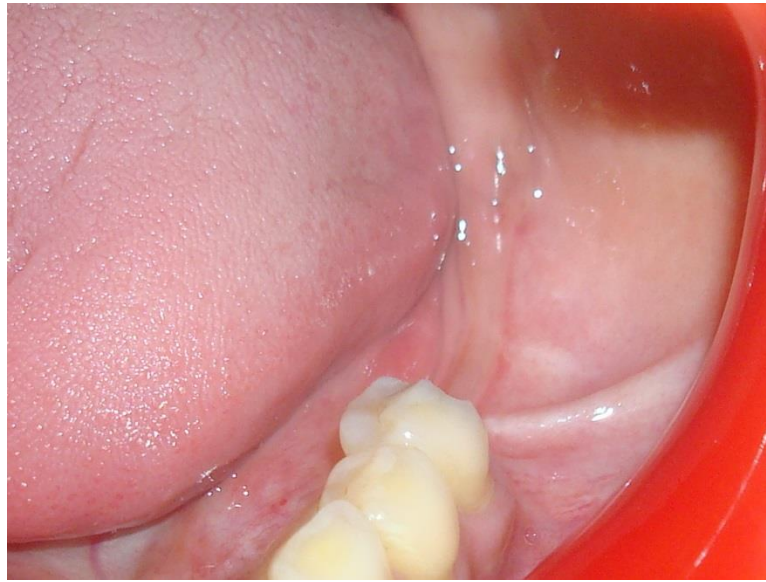
**Fig 3**



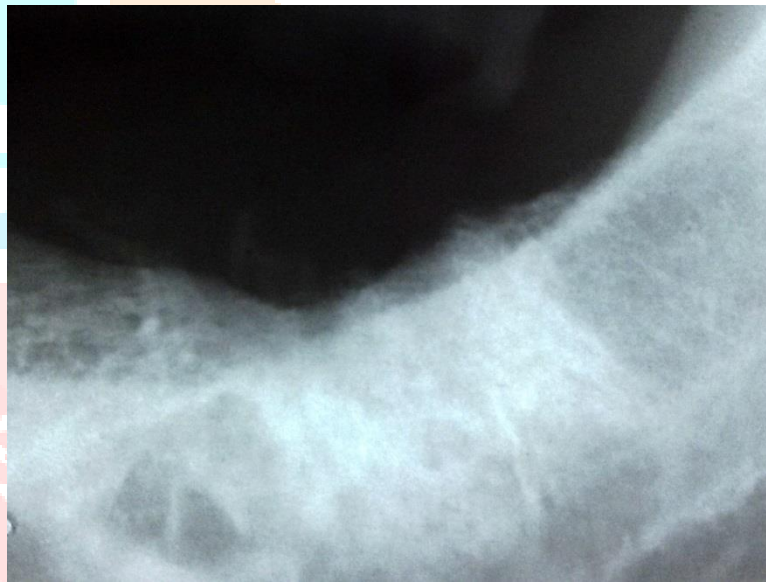
**Fig 4**



**Fig 5**



**Fig 6**



**Fig 7**