

Rare Case of Peripheral Giant Cell Granuloma – A Case Report

Abstract:

Peripheral giant cell granuloma PGCG is considered to be a reactive lesion caused by local irritation or trauma, normally presents as a soft tissue nodule consisting of multinucleated giant cells in background of mononuclear stromal cells and extravasated red blood cells. This lesion probably does not represent a true neoplasm, but rather may be reactive in nature, believed to be stimulated by local irritation or trauma, but the cause is not certainly known.

This case report describe the unusual appearance of PGCG at the alveolar mucosa of right maxilla of 46 year old female.

Key-words: Peripheral giant cell granuloma, reactive, giant cell.

Introduction:

Peripheral giant cell granuloma (PGCG) is the most common oral giant cell lesion appearing as a soft tissue extra-osseous purplish-red nodule consisting of multinucleated giant cells in a background of mononuclear stromal cells and extravasated red blood cells.¹This lesion is probably not present as a true neoplasm, but rather may be reactive in nature. The initiating stimulus has been believed to be due to local irritation or trauma, but the cause is not certainly known. It has been termed a peripheral giant cell “reparative” granuloma, but whether it is in fact reparative has not been established and its osteoclastic activity nature appears doubtful. Its membrane receptors for calcitonin demonstrated by immunohistochemistry and its osteoclastic activity when cultured *in vitro* are evidences that the lesions are osteoclasts,^[2–6] whereas other authors have suggested that the lesion is formed by cells of the mononuclear phagocyte system.⁷ The PGCG bears a close microscopic resemblance to the central giant cell granuloma, and some pathologists believe that it may represent a soft tissue counterpart of the central bony lesion.^[8]

Definition:

The peripheral giant cell granuloma is a relatively common tumor-like growth that develops on the gingiva or alveolar

ridge. It is microscopically similar to the central giant cell granuloma of bone, being characterized by a proliferation of multinucleated giant cells that resemble osteoclasts.^[9]

Incidence and location-

- Relatively common
- Almost exclusively involve the gingiva

Morbidity and mortality

- Reactive process with no malignant potential

Sex and age distribution

- More common in females
- Most patient 40-60 years old

Clinical features

- Reddish blue rubbery nodules that range in size from a few milimeter to 3-4 cm.
- Surface ulceration is common.

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Treatment :

Surgical excision.

Case Presentation:



Figure 1-Pre-operative view of swelling

A-frontal B-Lateral:

This 46-year-old female patient came to the department of Oral& Maxillofacial Surgery in Maharana Pratap College of Dentistry and Research Centre Gwalior (Madhya- Pradesh) with the chief complaint of swelling in her right cheek region (fig.-1) since 3-4 months.

Patient's history revealed that a small swelling appeared 3 month back on right buccal mucosa which gradually increased to attain present size. The patient reported the lesion to be asymptomatic, there were no aggravating and relieving factors

Her past medical history revealed that she is hypertensive and diabetic and she is taking telmisartan 40 mg BD for hypertension and metformin 500 mg BD for diabetes since 2 year.

There was no significant past dental history:

On examination she was conscious co-operative and well-oriented to time place and person.

Vitals:

Temperature -97.8 F

Blood Pressure -120/80 mm Hg

Pulse rate-70 beats per minute

Respiratory rate-17 beats per minute

On examination- A well-defined swelling is seen over right cheek region extending superioinferiorly from inferior border of orbit to body of mandible and antero posteriorly from corner of mouth to tragus of ear single swelling noticed over the right cheek is well defined, smooth in texture spherical in shape, non fluctuant in nature with mild raise in temperature, no change in colour noticed and swelling was painless and asymptomatic.

There were no aggravating and relieving factors.

No history of recent trauma, neurological deficit.

There was no significant history of weight loss and loss of appetite.

There was no swelling present in any other part of body

Cone beam computed tomography revealed (figure-2) no peri apical pathology noted irt.[11, 12, 13, 14.15, 16, 17, 18.]



Figure 2 -Cone beam computed tomography of right maxilla.

Hypochoic areas are shown in ultrasonography of right maxilla

Differential diagnosis:

Oral cavity shows different types of focal overgrowths and proliferation of different components of connective tissue of the periodontium which includes the fibers, bone, cementum, blood vessels or any particular cell .The significance of differentiating between PGCG and other lesions on the list cannot be overstated, since they can have distinct treatment and prognostic implications. The spectrum of localized proliferative growths on gingival tissue that closely resemble PGCG includes metastatic carcinomas, pyogenic granuloma, hemangioma, CGCG, and peripheral ossifying fibroma (POF). Eversole and Rovin had hypothesized that pyogenic granuloma, PGCG, and POF have different histologic responses to stimulation despite sharing comparable clinical and histologic characteristics, sex, and location predilection. Therefore, a histological investigation needs to be done in order to provide a conclusive diagnosis.[9]

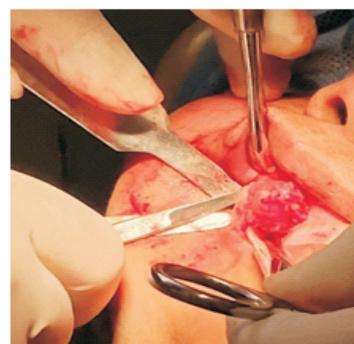


Figure -3 Excision of mass



Figure -4 Immediate post operative view
Excised soft tissue specimen sent for histopathological examination [figure-5]

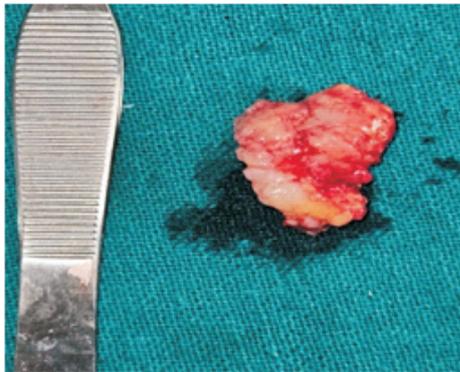


Figure-5 excised mass(specimen)

Follow up and outcome of intervention:

Sutures were removed one week later with an uneventful healing process.



Figure-6 Follow-up after 1 month

Histopathological Evaluation:

Microscopically, it showed a fibro vascular mass covered by the parakeratotic and acanthotic stratified squamous epithelium with elongated rete ridges and focal surface ulceration. There was a severe lymph plasma cell infiltrate in the connective tissue papillae and superficial lamina propria. [figure-7]

Red blood cell extravasation was found throughout the mass, especially in the area with multinucleated giant cells.

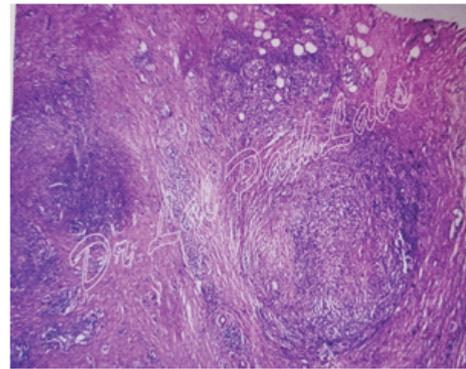


Figure -7 Histopathologic view

Discussion:

Because of its reparative properties, PGCG—a benign lesion with exophytic growth—was first known as Giant cell reparative granuloma. There are two types of giant cell granulomas: peripheral PGCG (soft-tissue lesion or extraosseous) and central giant cell granuloma (intraosseous)[11]. The PGCG is most frequently observed in the mixed dentition period, but it can occur at any time in life, with a higher occurrence in the 30- to 40-year-old age range. Females are more likely to have it (60%). The maxilla is less frequently impacted than the mandible[12]. Over time, lesions can grow to a size of up to 2 cm. While PGCG and pyogenic granuloma share clinical similarities, PGCG is more bluish purple in hue while pyogenic granuloma is bright red. Unilocular or multilocular radiolucency with well-defined or poorly-defined margins may be seen radiographically, giving it a cuffing appearance and with expansion of cortical plates.

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 factors¹³. It has been suggested that in addition to the excision to remove the base of the lesion, curettage should also be performed.

PGCGs are exophytic lesions occurring in the oral cavity. These lesions grow from the periodontal ligament or periodontium due to local irritants such as tartar, plaque, incompatible restoration, tooth extraction, and chronic inflammation. This case report presented the diagnosis and treatment of PGCG in the right maxilla of unknown etiology. Although PGCGs could be seen in all age groups, they are frequently seen in the 40-60 age group.

Although etiology of pgcg is still not clear but various local irritating factors, such as chronic irritants, tooth extractions, xerostomia, hormonal influence etc. may contribute in the formation of lesion.

Chronic irritants:PGCG may is considered to be a reactive lesion due to local irritation or trauma.

Some studies stated that PGCGs are more common in females In terms of clinical characteristics, fibroma, peripheral ossifying fibroma, haemangioma, epulis, and pyogenic granuloma should be considered in the differential diagnosis. Because of histological findings are similar to Brown tumour, aneurismal bone cyst, and benign osseous dysplasia, these pathologies should be considered in the differential diagnosis However there is similarity in clinical presentations with other enlargements, the histopathological analysis confirms PGCG. The microscopic features of present case were classic of PGCG.

The treatment modality of PGCGs is the surgical removal of the mass completely and eliminating the predisposing factor.

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