

## Peripheral giant cell granuloma of unusual size and site

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**Abstract:** Peripheral giant cell granuloma (PGCC) is a reactive lesion of oral cavity that occurs commonly associated with local trauma or irritation. More commonly it occurs in females in 4<sup>th</sup> to 6<sup>th</sup> decades of life, with a predilection for mandibular arch, anterior to 1<sup>st</sup> molar region, usually less than 2cm in size. But in the present case, PGCC was 5x4cm in size, and was in maxillary arch, producing an extra oral asymmetry. The lesion was treated by excision and curettage, with oral hygiene instructions. One year follow up revealed no recurrence.

**Key words:** growth, hyperplastic, maxilla, PGCC

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### I. Introduction:

The peripheral giant cell granuloma (PGCG) is a relatively common tumor-like growth of the oral cavity occurring exclusively on gingiva or edentulous alveolar ridge as variable in size, sessile or pedunculated<sup>1</sup>. PGCG is the least commonly diagnosed among the various hyperplastic gingival lesions (pyogenic granuloma, fibrous hyperplasia, peripheral ossifying fibroma)<sup>2</sup>. The origin of the multinucleated giant cells is unknown; some believe them to show immunohistochemical features of osteoclasts, while others suggest them to arise from mononuclear phagocyte system<sup>1</sup>.

### II. Case description:

A 28 year old woman reported with a painless swelling of right side cheek region that was present for the past four years. History revealed that it started as a growth, small in size inside her mouth near the right upper back tooth region and had slowly grown to the present size in four years resulting in facial asymmetry. Extra oral examination revealed a swelling of size 5x5cms approximately in the right side cheek region which was firm and nontender on palpation (fig:1). Intraoral examination revealed a pedunculated growth of size 5 x 4 cms approximately in the right maxillary third molar region which was pale in color with smooth surface (fig: 2). The growth seemed to arise from deeper tissues in relation to alveolar mucosa and buccal vestibule of 17 which had root caries and periodontal pocket on the distal aspect. The growth was firm and non tender on palpation. Bleeding on provocation was present. Intraoral periapical radiograph revealed root caries and periodontal bone loss on the distal aspect of 17 with furcal involvement and root stump in 15 region (fig:3). Maxillary occlusal radiograph revealed buccoverted 18 with alveolar bone loss in 17 region and a soft tissue shadow on the buccal aspect of 16, 17, 18 (fig:4). Based on clinical and radiographic findings a provisional diagnosis of pyogenic granuloma in 17 region was given. A differential diagnosis of fibroma was considered.. Routine blood and urine investigations, serum calcium, phosphorous, alkaline phosphatase analysis were done to rule out hyperparathyroidism. The growth was excised completely and sent for histopathologic examination. Thorough curettage and extraction of 17 were done. Histopathological report revealed a fibrocellular connective tissue with numerous multinucleated giant cells, areas of ossification and blood vessels(fig:5). Correlating histopathological and clinical findings, a final diagnosis of Peripheral giant cell granuloma was given. Follow up after 1 year revealed no recurrence indicating complete excision of growth with curettage and oral hygiene maintenance are sufficient to prevent a recurrence.

### III. Discussion:

Peripheral giant cell granuloma, also known as giant cell epulis or peripheral giant cell reparative granuloma is probably a reactive lesion caused by local irritation or trauma<sup>1</sup>. Jaffe first suggested the term "giant cell reparative granuloma" for the similar central lesion of the jaw bones<sup>2</sup> to help differentiate them from the giant cell tumor<sup>3</sup> as he believed the former lesion to represent a local reparative reaction rather than being a true neoplasm<sup>4,5</sup>. Bernier and Cahn proposed the term "peripheral giant cell reparative granuloma" for the lesion<sup>2</sup>. The latter terminology is currently not being used as the reparative nature of the lesion has not been proved<sup>6</sup>. Today, the term peripheral giant cell granuloma is universally accepted<sup>2</sup>. PGCG varies in appearance

from smooth, well demarcated<sup>7</sup> regularly outlined mass to irregularly shaped, multilobulated protruberance with surface indentation. Ulceration of the margin is occasionally seen<sup>4</sup> secondary to trauma which may give the lesion a focal yellow zone as a result of the formation of a fibrin clot over the ulcer<sup>8</sup>, the present case was a pedunculated growth with smooth surface.

Tooth extraction, restorations with poor finishing, poor oral hygiene with plaque, calculus and impacted food might act as aggravating factors<sup>9</sup>. In the present case, poor oral hygiene and buccoverted 18 might be the aggravating factor. PGCC has a female predilection of 60%<sup>1</sup> with highest incidence age as 4<sup>th</sup> to 6<sup>th</sup> decades. Mandible is affected more than the maxilla and the most common region being anterior to the permanent molars<sup>10</sup>. The usual size of the lesion is smaller than 2 cm in diameter, although occasionally larger ones may be seen<sup>1</sup>. PGCC occurs exclusively on gingiva or edentulous alveolar ridge<sup>1</sup> as variable sized, sessile or pedunculated lesion which is usually deep red to bluish red and bleed easily<sup>11</sup>. In the present case the size of the lesion was approximately 5 X 4 cms posterior to the right maxillary 1<sup>st</sup> molar region, probably induced by chronic food impaction due to root caries and periodontal pocket on the distal aspect of 17. Histopathology provides the definitive diagnosis as these lesions cannot be clinically differentiated from other of gingival enlargements like pyogenic granuloma, fibrous epulis, peripheral ossifying fibroma, inflammatory fibrous hyperplasia or a fibroma<sup>12</sup>. Rarely, a giant cell epulis may be due to hyperparathyroidism, in which case changes in blood chemistry confirm the diagnosis<sup>10</sup>. In the present case the presence of hyperparathyroidism was ruled out by biochemical analysis. However, the brown tumors of hyperparathyroidism are much more likely to be intraosseous in location and mimic a central giant cell granuloma<sup>1</sup>.

#### **IV. Conclusion:**

Treatment consists of local surgical excision down to the underlying bone<sup>1</sup>, with removal of local factors or irritants. The growth may recur if superficially resected<sup>13</sup>. In the present case the growth was treated by complete excision and curettage with oral hygiene instructions. the maxillary right 2<sup>nd</sup> molar with root caries and 2<sup>nd</sup> premolar root stump was extracted. 1 year follow up revealed no recurrence.

#### **V. Clinical significance:**

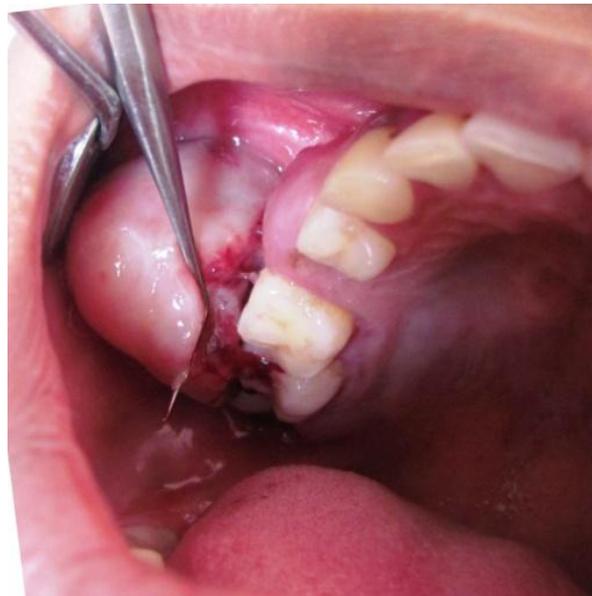
Though Peripheral Giant cell granuloma is common to occur anterior to permanent molars, in the mandible and usually does not grow more than 2 cm. in diameter, it has to be considered in the differential diagnosis of localized gingival growth occurring in the posterior region of the maxilla, even when unusually large in size. It is also important to rule out the possibility of hyperparathyroidism.

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**Fig:1** Extra oral view of the swelling.



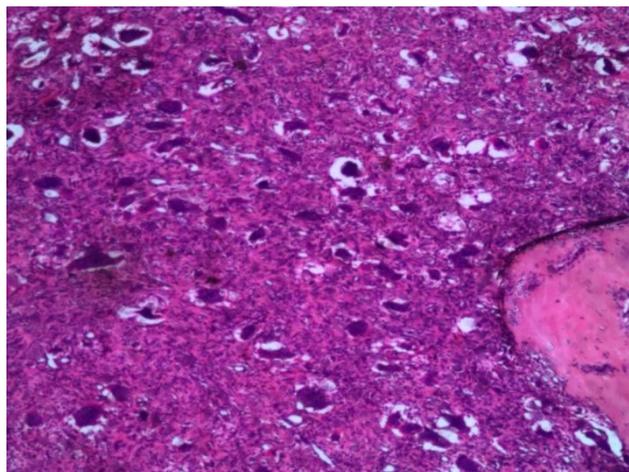
**Fig:2** Intra oral view of the pedunculated growth on the buccal aspect of gingiva in relation to 16,17,18 region.



**Fig:3** IOPA radiograph showing root caries and alveolar bone loss with furcation involvement in 17 region.



**Fig:4** Maxillary occlusal view showing presence of root stump 15 and soft tissue shadow of the growth buccal to 16,17,18.



**Fig 5:** Histopathology revealed a fibrocellular connective tissue with numerous multinucleated giant cells, areas of ossification and blood vessels.