

## Peripheral giant cell granuloma: A case report

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### Abstract

Peripheral giant cell granuloma is one among the commonly occurring reactive lesions of the oral cavity, along with pyogenic granuloma and peripheral ossifying fibroma. This lesion was thought of as a counterpart of the central type of giant cell granuloma but later was found out to be a reactive lesion rather than a true neoplasm. This lesion is commonly located on the gingiva of female subjects and most commonly in the mandibular anterior region.

### Keywords

peripheral giant cell granuloma; peripheral ossifying fibroma; reactive lesion; gingival growth

### Introduction

Peripheral Giant Cell Granuloma (PGCG) is considered as the most common giant cell soft tissue lesion occurring on the oral mucosa [1]. Synonyms that have been used to describe this lesions include osteoclastoma, giant cell reparative granuloma, giant cell epulis and even giant cell hyperplasia [2, 3, 4]. It is not clear as to who reported this entity for the first time and a literature review does not reveal the details.

### Case Report

A 48 year old female patient reported with a complaint of a growth over her mandibular anterior gingiva of one & halfmonth's duration. History revealed that the growth started insidiously and had progressed slowly to reach the size at the time of presentation. There was no history of preceding trauma, tooth ache, pain in the growth or any discharge. Her medical, surgical and dental histories were non-contributory. Upon examination, solitary, well defined, roughly round shaped, sessile growth was noted on the mandibular anterior labial gingiva in relation to 31, 32 teeth, appearing to be arising from the labialmarginal and attached gingivae, measuring roughly 2 cm X 2 cm in size (Figure 1). The growth was erythematous to purplish in color and the surface appeared smooth with some superficial ulcerations. The growth was non tender on palpation, soft in consistency and no discharge was elicited. The lingual gingiva appeared to be uninvolved. The teeth 31,32 were grade III mobile and extensive calculus deposition was noted. Intra Oral Periapical Radiograph (IOPAR) showed advanced resorption of the interdental bone in the region of 35, 36 with no evidence of radio-opaque flecks. The lesion was excised under local anesthesia and the specimen under H & E stains showed numerous plump fibroblasts and numerous, multinucleated giant cells were noted (Figure 2). Based on all the above features, a final

diagnosis of peripheral giant cell granuloma was considered. There has been no recurrence of the lesion after 3 years of follow up.

## Discussion

Epidemiology suggests that its incidence is in the range of 5.0% to 44% among all reactive gingival growths [5]. It is common to see PGCG in the fourth to sixth decade of life and it is considered uncommon in pediatric age group [2,4,6]. This lesion has a female preponderance and with 60% of cases occurring in them [4,7]. Also, it is said that most of the PGCGs arise in the mandible than maxilla and a special preference for the lesion to occur in the incisor-canine region is noted [4,5,6,7]. In the present case, the lesion was found in the mandibular anterior gingiva in an elderly female subject.

PGCG is believed to be originating from the periodontal ligament or the periosteum. Hence it is not seen on areas where there is no attachment of soft tissue to bone [3].

Different etiological factors have been suggested for the development of PGCG. As it is considered as a reactive lesion and not a true neoplasm, local irritation seems to be a favorable factor for its development. Other than this, trauma, presence of implants and tooth extractions [1,2,3,4]. One suggested etiology of importance to be considered is Hyperparathyroidism, where central or peripheral giant cell granulomas may be seen [6]. In the present case, extensive local factors were noted.

Clinically, the lesion can appear as a sessile or a pedunculated growth, the color may vary from erythematous to deep purplish, and rarely may show superficial ulceration, while they may grow upto 3 cm in size [4,6] and most often are painless and cause no symptoms. They generally are soft in consistency and non-tender [3,4,6]. It may cause resorption of the alveolar bone and may behave aggressively leading to bone resorption, occasionally displacement of teeth and mobility, especially in pediatric population [6]. In the present case, the lesion appeared as an erythematous to purplish exophytic growth over the gingiva and the teeth in association were mobile due to periodontitis and may not have been due to the lesion.

Radiographically, the lesion often shows “cupping” resorption of the underlying interdental alveolar bone [4,6]. Also, there may be areas which show presence of multiple radiopaque flecks [7]. Rarely, a central giant cell granuloma may perforate the cortex and present as a peripheral lesion [4]. Similar finding was not seen in the present case as there was bone resorption secondary to periodontitis.

Histopathologically, the lesion will be un-encapsulated with presence of multinucleated giant cells which are numerous over a background of proliferating spindle shaped cells [6,7,8]. Immunohistochemical analysis of the giant cells has shown that they are of mononuclear phagocytic lineage [8]. It is also suggested that these giant cells are due to fusion of histiocytes, fibroblasts and endothelial cells [9]. It was believed to be a counterpart of central giant cell granuloma initially [10], while later it was resolved that it is essentially a reactive lesion and not a counter-part.

Clinical differentials to be considered include, pyogenic granuloma, peripheral ossifying fibroma and even the WHO type of peripheral odontogenic fibroma, along with irritational fibromas and inflammatory gingival enlargements [2,3,6,9]. While it may be difficult to point out the diagnosis clinically, histopathologically it is characteristic with the presence of multiple multinucleated giant cells.

Cavitory lesions appeared to be slightly increased, while a PET-CT excluded the presence of active Surgical excision of the lesion, either conventional or CO<sub>2</sub> LASER, is the treatment of choice and it is suggested that the underlying periosteum be included in the excision, else it will tend to recur. Also, extraction of the adjacent teeth is suggested as the lesions originate from the periodontal ligament. A recurrence rate of 5-11 % has been reported. Incomplete removal and continued irritation are thought to be the cause for the same [3,9,10].

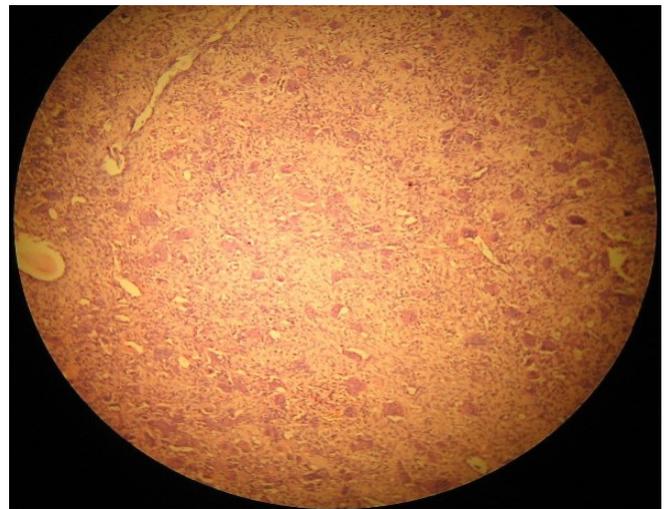
## Conclusion

It is not so common to find a PGCG occurring on the soft tissues, in day to day practice. When one suspects a PGCG, it is prudent to obtain a basic radiograph to determine if the lesion is central or peripheral. Following this, a thorough excision to be performed to prevent recurrence.

## Figures



**Figure 1:** Photograph showing the lesion in the mandibular anterior gingiva



**Figure 2:** H&E sections (10 X) showing fibroblasts and multiple multinucleated giant cells.

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