Peripheral Giant Cell Granuloma: A Diagnostic Dilemma- A Case Report

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Abstract

The unusual condition known as peripheral giant cell granuloma (PGCG) affects the gingiva or alveolar mucosa. Although the cause is unknown, this lesion has been described as a response to long-term local traumas like as trauma, ill-fitting dentures and restorations, sub- or supra-gingival dental biofilm, etc. This article presents a case of 37 years old female patient complaining of swelling in posterior mandible.

Keywords: *Peripheral Giant Cell Granuloma, Irritation, Giant Cell Epulis*

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Introduction

Giant cell granuloma lesions, which can be either peripheral or central, are mildly uncommon, benign, and non-odontogenic tumours of the oral cavity. They either develop centrally (in the bone) or peripherally (inside the gingiva). The peripheral giant cell granuloma (PGCG), also known as a giant cell epulis, a giant cell reparative granuloma osteoclastoma, or a giant cell hyperplasia, is a rare reactive exophytic lesion that develops on the gingiva and alveolar ridge. Although the exact cause is unknown, it is believed that an aggravating or aggressive factor such as trauma, tooth extraction, poorly done fillings, insecure dental prostheses, plaque, calculus, persistent infections, or impacted food may be to blame.[1]

Clinically, PGCGs can manifest as polyploidy or nodular lesions, which are typically bluish red, have a smooth, glossy, surface, a stalky, sessile base, and are tiny and well defined. Pain is infrequent, and continual trauma is typically what causes lesions to form. The muco-periosteum or periodontal ligament are the two typical sources of PGCGs. The PGCG is typically seen in the lower jaw, near the gingiva or edentulous alveolar borders.[2]

Case Report:

A 37-year-old female patient reported to the department with a chief complaint of swelling in her lower right back tooth region since last 3 months. The patient mentioned that the swelling was small pea sized initially which gradually increases and has attained the present size. There was no associated pain except for occasional interference of the swelling with occlusion and mastication. Past dental and medical history were non- contributory. Extraorally, no gross asymmetry was noted.

Intraorally, on inspection a large solitary swelling was present on right posterior

mandibular region extending from 45 to 47 region antero-posteriorly and from buccal vestibule of 36,37 to its lingual vestibule medio- laterally. The size of the swelling was approximately 4x7cm. The mucosal covering of the lesion exhibited surface tan, red, and bluish areas with a focal area of ulceration. On palpation, the swelling was firm in consistency, mildly tender, sessile and lobulated. Grossly decayed 47 was also present without any mobility of the teeth present (Fig 1).

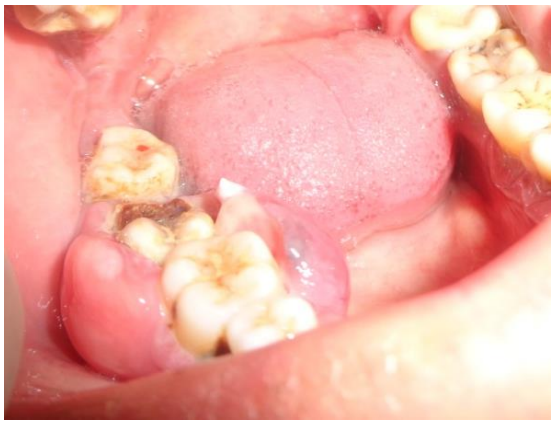

Fig 1. Growth extending from 45 to 47 region

On the basis of history and clinical examination, provisional diagnosis of Peripheral Ossifying Fibroma irt 47 was given with a differential diagnosis of Peripheral Giant Cell Granuloma.

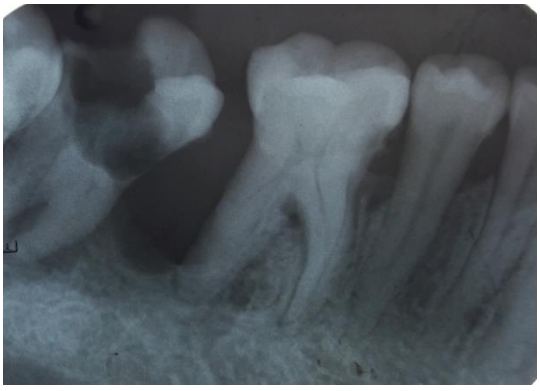

Fig 2. IOPAR with Cupping resorption from distal of 46 to mesial of 47

Radiographic investigations such as IOPAR and Mandibular Lateral Topographic Occlusal Radiograph were advised. IOPAR revealed resorption of bone irt distal to 46 till mesial aspect of 47 in “Cupping” fashion. Grossly decayed 47 was noted (Fig 2). Mandibular occlusal radiography revealed slight lingual cortical expansion irt 47,48 region (Fig 3).

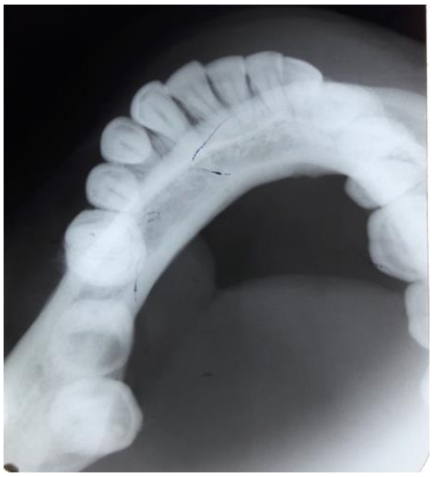

Fig 3: Occlusal view showing slight lingual cortical expansion irt 47,48 region

The patient was then referred for histopathological examination which revealed a lesion covered by a parakeratinized stratified squamous epithelium, with areas of atrophy and ulceration in its thickness. A dense proliferation of multinucleated giant cells was dispersed on a stroma of the tissue, which was highly vascularized, with areas of hemorrhage, deposits of hemosiderin, and infiltrate due to accumulation of lympho- plasmacytic inflammatory cells (Fig 4). Final diagnosis of Peripheral Giant Cell Granuloma was given based on histopathological report.

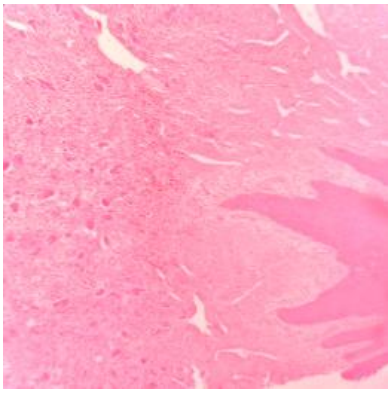

Fig 4: Photomicrograph showing Giant cells in the stroma. (X40 Magnification)

Discussion:

The most frequent oral giant cell lesion is a peripheral giant cell granuloma, often known as a "giant cell epulis". It typically manifests as a soft tissue purplish-red nodule with a backdrop of mononuclear stromal cells and extravasated red blood cells, and it contains multinucleated giant cells. This lesion is most likely not a real tumour; rather, it may be reactive in nature and thought to be triggered by local irritation or trauma, however the exact aetiology is unknown.[3,4]

The PGCG is present throughout life, with incidence maxima in the mixed dentition years and in the 30- to 40-year-old age range. 60% more women than men have it. Affected teeth are slightly more frequently the mandible than the maxilla.[5]

Lesions can grow enormous, with some reaching a diameter of 2 cm. Although the PGCG frequently has a more bluish-purple hue as opposed to the brilliant red hue of a typical pyogenic granuloma, the clinical presentation is comparable to that of the more prevalent pyogenic granuloma. The PGCG linked to dental implants has also just been identified.

It is still unclear what causes PGCG (giant cell epulides) and what its nature is. Previous explanations for the nature of multinucleated giant cells included the idea that they were osteoclasts left over from the normal resorption of teeth or a response to periosteum injury. The ability of these cells to excavate bone in vitro and the discovery that they express calcitonin receptors support the hypothesis that they are osteoclasts.[6,7,8]

Even though the PGCG grows within soft tissue, there may occasionally be "cupping" or superficial resorption of the alveolar bone crest beneath is present as seen in our case. Sometimes it may be challenging to distinguish between a core giant cell granuloma eroding through the cortical plate into the gingival soft tissues and a periphery lesion. The gingiva-related extra-osseous lesions of cherubism resemble giant cell epulides in appearance. The additional distinguishing clinical and radiological cherubism traits, however, will help to make the right diagnosis.[9]

Histologically, PGCG is made up of nodules of multinucleated large cells against a background of hefty mesenchymal cells in the ovoid and spindle shapes as well as extravasated RBCs. The number of nuclei within the big cells might range from a few to several hundred. Some of them have big, vesicular nuclei, while others show little, pyknotic nuclei. Unknown is the huge cell's place of origin. Studies on immunology and ultrastructure have demonstrated that the large cells are descended from osteoclasts (Fig 4).[10]

The surgical removal of the complete lesion's base as well as the elimination of the irritating factors' underlying cause make up the treatment for PGCG. The growth can come back if the bone was only partially removed. After treatment, the source of irritation must be eliminated in addition to complete simple excision and extensive clearing of the lesion's base to prevent recurrence. Recurrence of PGCG is uncommon; reports of it range from 5 to 11%. Early diagnosis based on clinical, radiographic, and pathological symptoms and validated by these methods enables conservative care with a lower chance of tissue and tooth destruction.[11,12]

Conclusion

Proper and prompt diagnosis of this lesion is necessary to provide suitable treatment. Excisional biopsy and subsequent histopathology should be the main management strategy for soft tissue disorders.

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