Case Report

Peripheral Giant Cell Reparative Granuloma in the Anterior Mandible- A Case Report with Review of Literature

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ABSTRACT

Peripheral giant cell granuloma is a tumor like growth in the oral cavity. It is often called as peripheral giant cell reparative granuloma. This lesion probably does not represent a true neoplasm, but rather, a reactive lesion, believed to be stimulated by local irritation or trauma. The cause, however, is not certainly known. It is believed to be arising from periodontal ligament (PDL) membrane or periosteum. This article reports a case of peripheral giant cell granuloma involving the mandibular anterior region in a 18-year-old young female patient. The lesion was completely excised at the level of periosteum and curettage was done. Follow up period of 6 months reported no recurrence.

Key words: *Giant Cells, Giant Cell Epulides, Giant Cell Reparative Granuloma, Peripheral Giant Cell Granulom,.*

Localized gingival overgrowth is a common finding in clinical practice which can often present a diagnostic dilemma because of its similar appearance to many other oral conditions. The oral mucosa is continuously exposed to external and internal stimuli, thereby showing a variety of diseases ranging from neoplastic to developmental, reactive and inflammatory origin.[1] Peripheral giant cell granuloma (PGCG) is the most common oral giant cell lesion which presents itself as an extra-osseous, reddish-purple nodule accounting for 7% of all benign tumors of the jaw.[2]

It is also known as a "Giant-cell Epulis" or Peripheral Giant-cell Reparative Granuloma".[3] The present case report describes the clinical, radiological and histopathological findings of PGCG diagnosed in mandibular anterior region in a young female patient.

CASE DESCRIPTION

An 18-year-old female patient reported with a chief complaint of growth in the lower jaw region since 2 months. It began as a small pea- sized lesion and gradually grew to the present size. The adolescent tried manipulating it with blade after which it started growing faster and reached to the present size. The lesion was painless, with no discharge/numbness. Though she did not complain of any difficulty in speech, she had difficulty in eating. She did not report any deleterious habits. Medical history was non-contributory. On general examination, no abnormality was detected.

Extraoral findings revealed a slight facial asymmetry on right parasymphysal region. Her right submandibular lymph node was tender on palpation, firm in consistency and not fixed to the underlying structure. On intraoral examination,

a single, well defined, pinkish white, painless, lobulated overgrowth of 2 cm in size, was present in the region of interdental papilla between 42 and 43(FIG 1). On palpation, it was non-tender, sessile with no discharge. Inspectory findings were confirmatory. There was grade III mobility present with 41, 42 and 43. Chair-side investigations, like pulp vitality in 41, 42, 43 region and diascopy were done, the results of which were non-contributory. Based on clinical findings, a provisional diagnosis of chronic pyogenic granuloma was made. Differential diagnoses considered were peripheral giant cell granuloma, inflammatory fibrous hyperplasia, peripheral ossifying fibroma, hormonal tumor, and capillary hemangioma.

Radiographic investigations revealed a unilocular radiolucency, with an ill-defined peripheral margin, extending from 42 to 43. Internally, the lesion had a fine granular bone pattern, with cupping resorption of interdental bone. The roots of 42 and 43 were seen to be displaced. The findings were seen in both intraoral periapical and panoramic radiograph (Fig 2 & 3). Differential diagnoses made according to the radiographical findings were periodontal abscess, ossifying fibroma, peripheral giant cell granuloma, Central giant cell granuloma, a malignant tumor involving the periodontium of 42 and 43 region. Several serological investigations like serum calcium level, parathormone and alkaline phosphatase levels were advised, which were within normal limits.

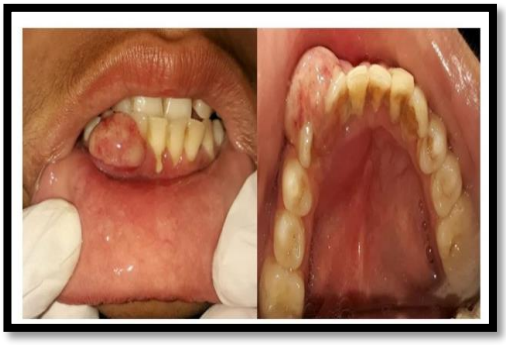

Figure 1: Intraoral photograph

The entire surgical procedure was carried out under local anesthesia. The lesion was surgically excised along with extraction of 42, 43 and 44followed by a deep curettage. The specimen was sent for histopathologic examination which revealed the presence of proliferating parakeratinized stratified squamous epithelium of variable thickness along with the presence of elongated rete ridges. Underlying connective tissue showed presence of hyperactive reactive stroma with abundant multinucleated foreign body giant cells, a dense infiltration of chronic inflammatory cells, young proliferating fibroblasts and abundant macrophages. (Fig 4) A final diagnosis of peripheral giant cell granuloma associated with 42 and 43 region was made. On post operative follow up, healing of the surgical site was uneventful. The patient's consent was taken for academic purpose.

Figure 2: Panoramic radiograph

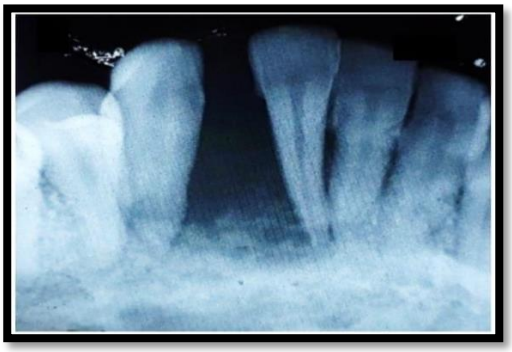

Figure 3: Intraoral periapical radiograph of 42,43 region

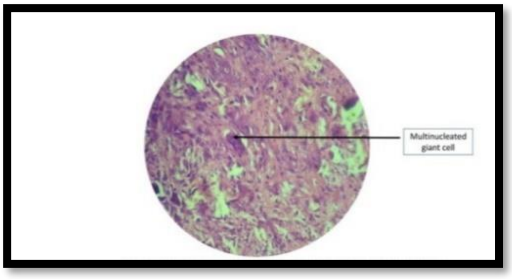

Figure 4: Photomicrograph

DISCUSSION

Peripheral giant cell granuloma (PGCG) is a benign, non-odontogenic tumor of the oral cavity.[4] The term 'Peripheral Giant Cell Reparative Granuloma' was proposed by Bernier and Cahn for the lesion.[5]Giant cell granuloma occurs either as an exophytic peripheral lesion occurring primarily on the

gingiva or in the jaw, skull, facial bones as a centrally located lesion. Although etiological factors could not be determined exactly, low socioeconomic status of the patients and unfavorable oral hygiene seemed to be the predisposing factors. [6]Some authors had also suggested that a history of trauma might also be related to the development of PGCG.

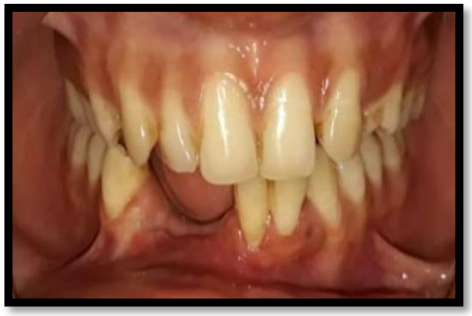

Figure 5: Post-operative follow up after 3 months

In our case, the patient had traumatized the lesion by attempting to cut it with a blade.[5][7] PGCG can occur at any age with predominance in 5th - 6th decade of life.[8] The lesion is commonly seen among females. Mandibular to maxillary predilection is 2.4:1 with the lesion commonly being located in the premolar and molar area.[5][9][10] In our case, patient was in the second decade of life and the lesion was present in the mandibular anterior region i.e., interdentally between 42 and 43.

Pyogenic granuloma has a similar clinical appearance, but is often more bluish-purple than PGCG.[11] These exophytic soft tissue lesions may follow an aggressive course which can interfere with eruption of teeth, produce mild to moderate tooth movement or can even result in tooth displacement.[12] In our case, there was grade III mobility present with 41, 42 and 43. A saucerization/ cupping resorption of underlying alveolar bone in the region of 41, 42 and 43 was noted radiographically, which has also been reported by some of the authors.[8][13]

Histopathologically, PGCG shows a delicate reticular and fibrillary connective tissue stroma containing large numbers of ovoid or spindle shaped young connective tissue cells and multinucleated giant cells. Fibroblasts, osteoblasts and osteoclasts predominate in the hyperplasia. When tumor occurs in areas where teeth are present, the radiograph may reveal superficial destruction of the alveolar margin or crest of the interdental bone as seen in fig 2[8]

The treatment of PGCG encompasses surgical resection and elimination of the underlying etiologic factors with removal of the entire base of the lesion. Extraction of the adjacent teeth is necessary when the periodontal membrane is affected. In our case, 41,42 and 43 was extracted with deep curettage of that region. A recurrence rate of up to 10.5% has been reported, with a recommended follow-up of 3 years.[14]

CONCLUSION

Localized overgrowths in the gingiva can present themselves in a deceptive way and lead to an inaccurate diagnosis.Because of the potential for local aggressive behavior, it is essential to make a timely and definitive diagnosis correlating with clinical, radiological and histopathological findings.The preferred management of the PGCG therefore aims to remove the entire growth along with its base, followed by the removal of other etiological factors responsible for causing irritation.

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