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Peripheral giant cell granuloma Manifestation of pregnancy-report of a case

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Abstract
The peripheral giant cell granuloma is a benign oral lesion occurring on the gingiva and alveolar ridge. It is a reactive exophytic lesion which occurs as a result of poor dental restorations, food impaction, ill-fitting dentures and calculus. It is the most common oral lesion and occurs at an average age of 30 years. The present report highlights the development of an interproximal, massive lesion associated with pregnancy resulting in migration and separation of the adjacent teeth and the resorption of the interproximal bone. The lesion was excised and the bone was curetted.

Keywords: Peripheral giant cell granuloma, Pregnancy, Differential diagnosis

1. Introduction
A granuloma is a focal area of granulomatous inflammation. Microscopically, it consists of aggregation of epithelial cells which are transformed form macrophages. This cells are in turn, occasionally, surrounded by lymphocytes and plasma cells. The giant cell granuloma occurs either as a peripheral exophytic growth on the gingiva or as a centrally located lesion within the jaw, skull or facial bones or as central giant cell granuloma [1]. The synonyms of Peripheral Giant Cell Granuloma (PGCG) are Giant Cell Epulis and Peripheral Giant Cell tumor. The peak incidence of PGCG is between 40 and 60 years of age [2].
The present article provides an expository outlook regarding a common phenomenon in which pregnancy may have played a vital role in the initiation of this lesion. The demographic, clinical, hematological, radiographical and histopathological features and the management of the case are detailed.

2. Case Report
A 37 year old female reported with a complaint of growth in the left lower front teeth since six months. It was initially small in size and gradually increased to the present size. It was associated with bleeding while brushing and also severe intermittent pain which eventually subsided. When she presented herself for treatment, she was totally asymptomatic. Medical history revealed that she was at the end of the second trimester of pregnancy.
On general examination, the patient was moderately built and moderately nourished with presence of pallor. Head and neck examination revealed that two right submandibular lymph nodes were palpable measuring about 1.5cm, firm, tender and movable. Local examination revealed a solitary Polypoid growth measuring approximately 2.5cm x 2cm in size, interdentally in the region of 33 and 34 with lingual and buccal extension. Surface appears lobulated, smooth, and shiny and shows ulceration. Color is of normal mucosa with areas of bluish-red discoloration (fig 1). On palpation, the growth was pedunculated, soft to firm in consistency, non-tender and Grade 3 mobility in relation to 33 and 34. There was generalized gingival inflammation, bleeding on probing and calculus double positive.
Complete hemogram revealed reduction in values of not only hemoglobin level (10.2 gm%) but also in other parameters like MCV (70.9Fl), MCH (20.6Pg), MCHC (29.1%) respectively. Orthopantomograph showed interdental bone loss extending up to the apical one-third of 32, 33, 34, 35 and 36 with migration of 34 distally (fig 2). Incisional biopsy of the lesion was advised and specimen was sent for histopathological examination. Microscopic examination of Haematoxylin and Eosin stained section revealed Parakeratinized, stratified, squamous epithelium with focal area of ulceration. The connective tissue showed dense inflammatory

Infiltrate predominantly lymphocytes and few plasma cells. Multi- Nucleated giant cells and few budding capillaries were seen. In addition, few areas of reactive bone formation were seen (fig 3). All these features are suggestive of Peripheral Giant Cell Granuloma.

Following the diagnosis of Peripheral Giant Cell Granuloma, the patient was scheduled for excisional biopsy and the excision of the lesion was done. The mandibular left first and second premolar were extracted and the surgical site was sutured. Gross specimen was a single bit of size (3.2cmx2.2cmx2.8 cm), brown in color, and firm in consistency (fig 4). The patient tolerated the procedure well and healed unremarkably on follow up. Along with that the patient was put on oral iron replacement therapy.

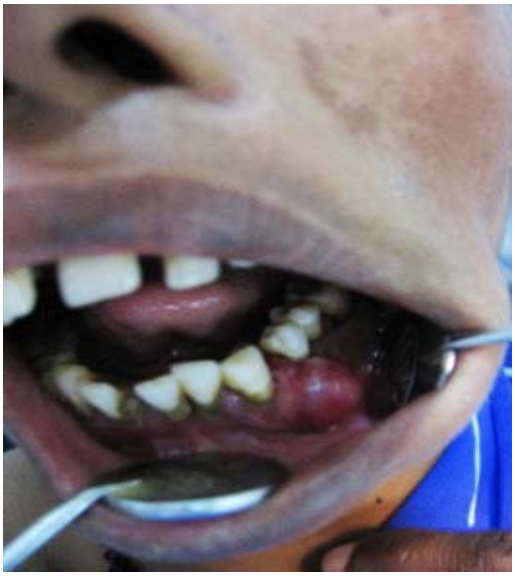

Fig 1:

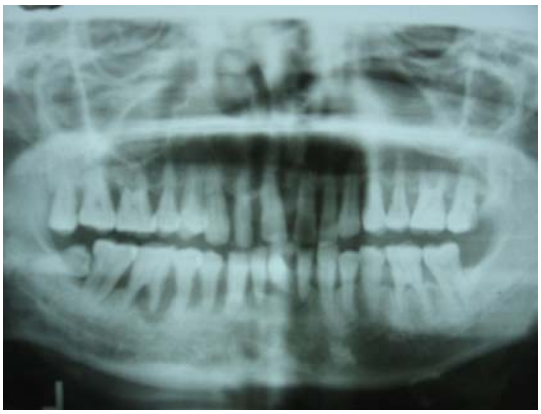

Fig 2:

Fig 4:

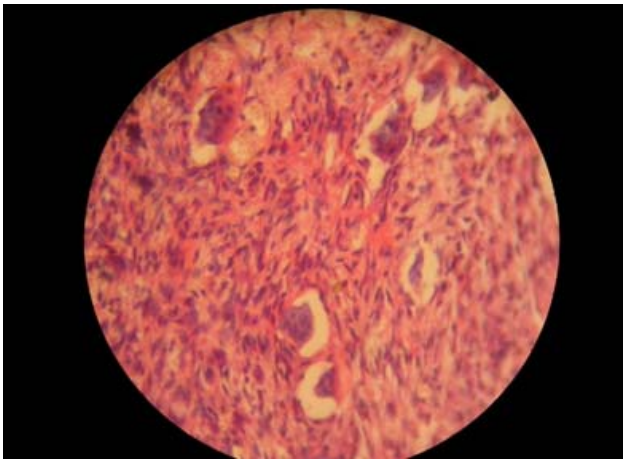

Fig 3:

3. Discussion

The peripheral giant cell granuloma is not a true neoplasm but it is an unusual proliferative response of tissues to injury. So the pivotal role of trauma has been emphasized. This can occur through teeth extraction, denture irritation and simply chronic infection. The other factors are poor dental restoration, food impaction, calculus, xerostomia and hormonal influence in pregnancy. Matter et al stated that PGCG in pregnancy can be caused by the compilation of various factors associated with physiological state such as immunosuppressive action of hormones and increased in response of gingiva to these hormones. Thus it can be confirmed that ovarian hormones act as the putative causative factor for PGCG in pregnancy [3].

Giansanti and Waldron stated that it can develop at any age but occurs at an average age of 30 years. In the study of 97 patients by Andersen et al, majority of cases were in the age group between 5 and 15 years. The lesion shows peak prevalence in 5th and 6th decades. There is no racial predisposition. In a study of 720 cases of this lesion by Giansanti and Waldron, there was slight predilection for occurrence in mandible over maxilla, that is, 55% in mandible and 45% in maxilla. The sites where it is most commonly seen are gingiva and alveolar ridge. Considering the gender, the female predilection is more at 65% compared to 45% in males, due to hormonal influences. The ratio of predilection is 2:1 (female: male) [4].

The peripheral giant cell granuloma most commonly present as a pedunculated or sessile modular mass or polypoid in appearance that seems to be arising deeper in the tissues such as periodontal ligament or mucoperiosteum. Although larger lesions are occasionally seen, usually the size varies between 0.5 to 1.5cm. The color may vary from pale pink to reddish or may appear bluish purple depending upon varying amounts of hemosiderin erythrocytes and varying amounts of hemosiderin [5]. The differential diagnosis of peripheral giant cell granuloma is as follows: pyogenic granuloma, metastatic neoplasm, peripheral fibroma, peripheral ossifying fibroma and peripheral ameloblastoma. The pyogenic granuloma is soft, friable and bleeds on slight provocation [6]. On other hand the metastatic tumors in gingiva is hard and in radiograph, there is irregular bone resorption underlying the lesion. Even though peripheral ossifying fibroma resembles PGCG clinically its major site of predilection is anterior maxillary region. The peripheral fibroma is usually sessile and firm. The mucosa overlying has the same color that of the adjacent structures [7]. In peripheral ameloblastoma, significantly higher age (52.1yrs) and the lesion is more commonly seen in males when compared to females (1.9:1) [8].

Radiographically, the cupping resorption of underlying alveolar bone may be seen. The periodontitis of underlying tissues [9]. The treatment is most frequently surgical excision with the adjacent teeth should be scaled to remove any source of irritation and to minimize risk of recurrence. The most important thing is to do the regular follow up as this lesion has the recurrence rate of 10-15% [10]. Patients with poor oral hygiene and hormonal imbalance are more susceptible to have large PGCG and should be examined occasionally.

4. Conclusion

PGCG is the most common lesion encountered in day to day clinical practices. However the clinical similarity of this lesion with metastatic tumor can cause uncertainity in treatment plan. But a careful radiographical and histopathological evaluation is necessary to differentiate this both entities. Finally, the most important is differential diagnosis inorder to eliminate the malignant conditions.

5. Acknowledgement

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