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RESEARCH ARTICLE

PERIPHERAL GIANT CELL GRANULOMA-A REPORT OF TWO CASES

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ABSTRACT

Peripheral giant cell granuloma (PGCG) is the most common giant cell lesion in the oral cavity, also called "Giant cell Epulis". PGCG does not represent a true neoplasm, thought to be a reactive hyperplastic lesion which is believed to be stimulated by local irritation or trauma. This paper presents two cases of PGCG. One PGCG is in the esthetic zone of the upper jaw of a 38 years old female patient. In the second case, the PGCG in the right mandibular molar teeth region of a 36 years old female patient. These case reports contains clinical, radiological, histopathological findings as well as diagnosis, treatment & follow-up after total excision.

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INTRODUCTION

Overgrowth of the gingiva can be generalized or localized, commonly seen in clinical practice and similar clinical features that arise difficulty in the diagnosis. Localized gingival overgrowth is of various types and the most common are peripheral fibroma, pyogenic granuloma, peripheral ossifying fibroma, and peripheral giant cell granuloma (PGCG).(1) Peripheral giant cell granuloma (PGCG) or the so-called "giant cell epulis" is a most common giant cell lesion of the oral cavity. This lesion does not represent a true neoplasm. Although etiology is unknown, it is believed that it is a reactive lesion, stimulated by local irritation or trauma. (2) PGCG clinically appears as a red, reddish-blue mass on the gingiva or on edentulous alveolar ridge. It may be sessile or pedunculated and ulcerated or non-ulcerated in nature.(3). Radiographically it exhibits bone resorption and "cuffing appearance". (4) Histologically, PGCG consists of numerous multinucleated osteoclast-like giant cells with highly fibrillar connective tissue stroma. It is a non-encapsulated mass with high vascularization with the presence of ovoid or spindle shaped young fibroblasts and bone trabeculae due to multiple foci of bone formation.(4,5) The present study describes 2 cases of peripheral giant cell granuloma and offers a review of the literature to define the clinical, radiological and histological characteristics of PGCG and importance of the differential diagnosis of gingival lesions is emphasized.

CASE 1

A 38 years old female patient presented with sessile, multi-lobulated,non-pulsatile erythematous growth measuring abouth 4cm x 2cm x 3 cm in the esthetic zone of the upper jaw extending slightly labially from right maxillary central incisor to the anterior portion of the hard palate for last 3 month. It is soft to firm in consistency. The teeth of patient was mobile due to loss of alveolar bone. The patient's medical history was not remarkable for any significant systemic disease. Intra oral periapical radiograph shows resorption of bone and peripheral cuffing of bone. The teeth associated with the lesion were extracted and the lesion was removed at the department of Dentistry of PCSGMCH and excisional biopsy is performed

along with immediate soft tissue grafting is placed. The sections stained with H & E revealed the presence of parakeratinised stratified squamous epithelium with underlying fibrovascular connective tissue. The epithelium is ulcerated at places. The connective tissue showed presence of slit like vascular spaces and multiple, osteoclast like multinucleated giant cells. Chronic inflammatory cell infiltrate chiefly composed of lymphocytes and plasma cells could be noted in the connective tissue.

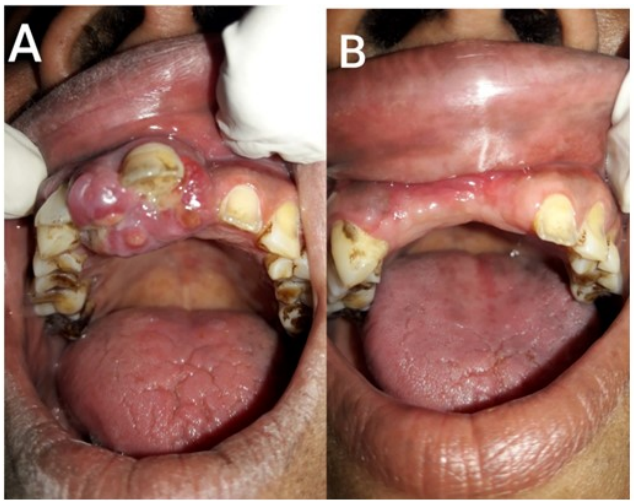

Figure1(A) Exophytic, multilobulated, non-pulsatile growth in the esthetic zone of upper jaw. (B) After 3 month follow up

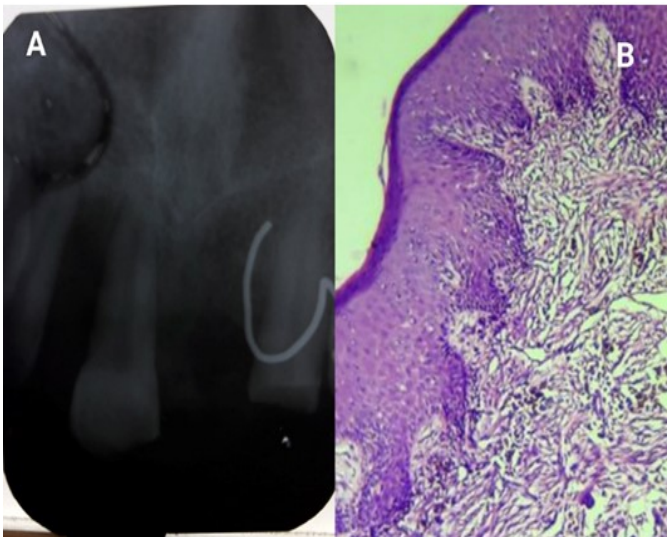

Figure 2. (A) IOPA Radiograph shows resorption of bones and peripheral 'Cuffing'. (B) Sections stained with H & E shows Parakeratinized eptithelium with densely packed connective tissue along with multinucleated Giant cell

CASE 2

A 37 years old female patient present with exophytic, sessile multilobulated, non-pulsatile erythematous growth present in the right mandibular molar teeth region along with mobility of regional first molar tooth persisted about last 2 month. The color of lesion is bright red to pink. It is soft to firm in consistency measuring about 20mm x 6mm x 10mm. The patient had build up of tartar and bacterial plaques. The patient's medical history was not remarkable for any systemic disorder. Panoramic radiograph revealed loss of the regional alveolar bone and enlargement of periodontal space.

The tooth associated with the lesion was extracted and the lesion was removed at the department of Dentistry of PCSMCH. An incisional biopsy was performed initially which did not reveal any findings of malignancy. Then, lesions were excised completely. The histopathological evaluation showed hyperplastic stratified squamous epithelium with ulceration and multiple numerous foci of giant cells in connective tissue stroma. There was also numerous young fibroblasts and diffuse chronic inflammatory cell throughout the lesion.

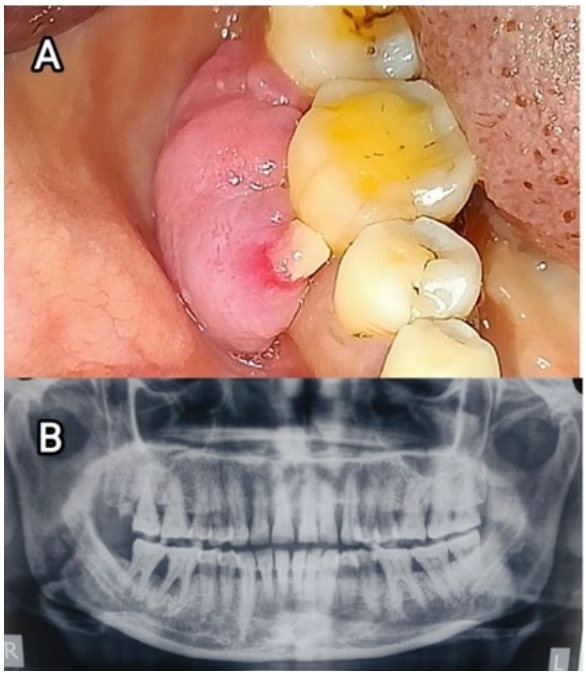

Figure 3. (A) Exophytic, Multilobulated, Erythematous growth in the right mandibular molar teeth region. (B) OPG revealed loss of regional alveolar bone and widening of PDL spaces.

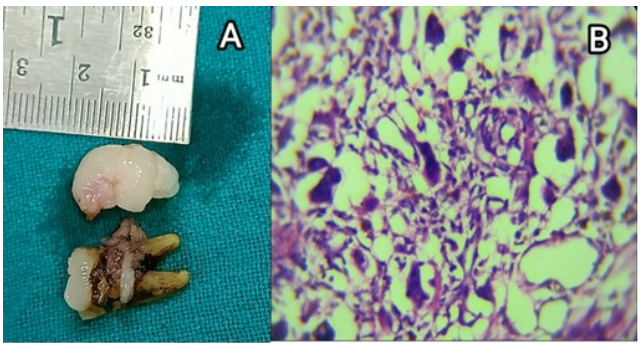

Figure 4. (A) Excised soft tissue specimen measuring about 20mm x 6mm x 10mm along with regional molar teeth (B) sections stained with H & E revealed densely packed connective tissue along with multinucleated giant cell and young fibroblast

DISCUSSION

Peripheral giant cell granuloma (PGCG) is an exophytic, pedunculated or sessile, extra-osseous, and non-neoplastic pathology that originates in the periosteum or from periodontal ligament. (6) These lesions often occur as a result of local irritations such as tartar, plaque, chronic infection, chronic irritation, tooth extraction, fillings with discordant margins, unstable irregular dentures and originate from the periodontal ligament or periodontium. (7)

The lesions often measure less than 2 cm in size; however, they can also reach larger sizes.3 The PGCG commonly seen in mixed dentition stage; however, it occurs throughout life with high incidence in the age group of 30–40 years. (8) It is more common among females (60%). The mandible is more commonly affected than maxilla.(9). Radiographically, unilocular or multilocular radiolucency may be present with well-defined or ill-defined margins giving it cuffing appearance. (10). In the present case, the lesion was removed from the maxilla measured 4×2.5×2.5 cm and from the mandible measured 2.5×2×1.8 cm. Poor oral hygiene is assumed to have contributed to the development of the large lesions in the patient. Both cases are 30-40 age group female patients.

The giant cell granulomas can rarely develop secondary to hyperparathyroidism. The lesions caused by hyperparathyroidism are observed at the centre of the bone and these lesions are referred to as brown tumors.(11) Histologically, PGCG consists of numerous multinucleated osteoclast-like giant cells with highly fibrillar connective tissue stroma. It is a non-encapsulated mass with high vascularization along with the presence of ovoid or spindle shaped young fibroblasts and sometimes bone trabeculae due to multiple foci of bone formation.(4,5). Pyogenic granuloma, fibrous epulis, peripheral ossified fibroma, peripheral odontogenic fibroma, hemangioma cavenosum, and papilloma must be taken into consideration in differential diagnosis. (12). The definitive diagnosis is based on histopathological examination.(13) Histologically, these lesions resemble to central giant cell granulomas showing intraosseous localization . Because of this similarity, some pathologists consider PGCGs as the soft tissue counterpart of central giant cell granuloma. The differentiation is based on radiological evaluation.(12). Treatment consists of local surgical excision down to the underlying bone, for extensive clearing of the base. (3) Removal of local factors or irritants is also required.(12). Due to its high recurrence rate (5.0–70.6%, average 9.9%), complete excision of the lesion along with its base is required. It has been suggested that in addition to the excision to remove the base of the lesion, proper curettage should also be performed.(14)

CONCLUSION

An accurate and proper diagnosis is necessary for the management of gingival overgrowth which can be made through clinical, radiographic, and histo-pathological evaluation. Surgical excision with bone curratage and removed the lesion with no signs of recurrence. Soft tissue grafting using a connective tissue graft to prevent esthetic complications was performed immediately after surgical excision. Regular post-operative follow-up with preventive measures should be implicated.

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