PERIPHERAL GIANT CELL GRANULOMA IN PAEDIATRIC PATIENT

AUTHORS: Dr. Ramakant Dandriyal, MDS, Professor, Dr. Himanshu Sharma, MDS, Senior Lecturer, Dr. Meenal Airan, Post Graduate Student, Dr. Himanshu Pratap Singh, Post Graduate Student, Department of Maxillofacial Surgery, Institute of Dental sciences, Bareilly
Address Of Correspondence: Dr. Meenal Airan, PG Student, Department of Maxillofacial Surgery, Institute of Dental sciences, Bareilly
Email: meenal vardan@gmail.com

ABSTRACT: Peripheral giant cell granuloma or giant cell epulis is the most commonly occurring oral giant cell lesion. It presents as an infrequent exophytic lesion of the oral cavity, typically starting in the interdental papillae. PGCG is an oral reactive lesion occurring on the gingiva and alveolar ridge usually as a result of local irritating factors such as tooth extraction, poor dental restorations, food impaction, ill fitting dentures, plaque, and calculus. This article reports a case of peripheral giant cell granuloma arising at the right mandibular alveolus in a 3 years old child. The lesion was completely excised to the periosteum level and no residual or recurrent swelling or bony defect was apparent in the area after a follow-up period of 6 months.

Key Words: Epulis, Peripheral Giant Cell Granuloma, Oral Reactive Lesions

INTRODUCTION:
Peripheral giant cell granuloma presents as a soft tissue extra-osseous purplish-red nodule consisting of multinucleated giant cells in a background of mononuclear stromal cells and extravasated red blood cells. This lesion is probably not a true neoplasm but rather may be reactive in nature. The PGCG bears a close microscopic resemblance to the central giant cell granuloma, and some pathologists believe that it may represent a soft tissue counterpart of the central bony lesion. The PGCG occurs throughout life, with peaks in the incidence during the mixed dentition years and the 30-40 years old age group. It is more common among females (60%). It occurs on the gingival margins or edentulous alveolar ridge as a focal purplish nodule in either the anterior or posterior regions of the jaws but most frequently between the first permanent molars and the incisors. The mandible is affected slightly more often than the maxilla. The lesion can be sessile or pedunculated, spreading through penetration of the periodontal membrane and may or may not be ulcerated. Lesions can become large, some attaining 2 cm. in size. The clinical appearance is similar to the more common pyogenic granuloma, although the PGCG often is more bluish-purple compared with the bright-red typical pyogenic granuloma. Recently, the PGCG associated with dental implants has been reported. Although the PGCG develops within soft tissue, “cupping” superficial resorption of the underlying alveolar bony crest is sometimes seen. There may be little radiographic evidence of some lesions in teeth-bearing areas because lesions may be small and primarily in the soft tissues. Larger lesions exhibit a superficial erosion of the cortical bone surface and may demonstrate some widening of the adjacent periodontal space. Close examination of the area may reveal small spicules of bone extending vertically into the base of the lesion. In edentulous areas, the cortical bone exhibits a concave area of a resorption beneath the lesion, often referred to as “saucreasisation”. Radiographs are important to determine if the lesion is of gingival origin or of central origin with extension to the surface. If the lesion is of central origin, other predisposing conditions must be ruled out before a definitive diagnosis can be made. Rarely a giant cell epulis may be due to hyperparathyroidism, representing the so-called osteoclastic "brown tumours" associated with this endocrine disorder. and is then likely to be associated with other lesions in bones and changes in the blood chemistry. The extra-osseous lesions of cherubism involving the gingival appear very similar to giant cell epulides. However, the other distinctive clinical and radiographic features of cherubism will indicate the correct diagnosis. Histologically, PGCG is composed of nodules of multinucleated giant cells in a background of plump ovoid and spindle shaped mesenchymal cells and extravasated red blood cells. The giant cells may contain only a few nuclei or up to several dozen. Some of them are large, vesicular nuclei; others demonstrate small, pyknotic nuclei. The origin of the giant cell is unknown. Ultrastructural and immunological studies have shown that the giant cells are derived from osteoclasts. Mitotic figures are fairly common in the background mesenchymal cells. The nodules are surrounded by bands of fibrous connective tissue stroma containing small sinusoidal spaces, especially in the periphery. Osteoid deposits or spicules of woven bone are often present in the base of the lesion. Abundant haemorrhage is characteristically found throughout the mass, which often results in deposits of haemosiderin pigment, especially at the periphery of the lesion. Although the lesion is vascular, the very large aneurysmal vascular spaces as seen in the central giant cell granuloma are not present. Most lesions of PGCG respond well to thorough surgical curettage that exposes all bony walls. The adjacent teeth should be carefully scaled to remove any source of irritation and to minimise the risk of recurrence. Katsikeris et al considered from their analysis of reports that the recurrence rate is between 5% to 10% and re-excision must be performed. When the periodontal membrane is involved, the associated teeth may need to be extracted to accomplish complete removal. Occasionally, lesions may recur. This is not an indication for more radical treatment.

CASE REPORT
A 3 years old male patient was referred to the department of oral and maxillofacial surgery with the chief complaint of gingival enlargement and pain while chewing food. His intraoral examination revealed a raised, round, sessile, smooth-edged mass 2cm in diameter located on the right mandibular gingiva (Fig. 1 and 2). Radiological examination revealed no evidence of bony involvement. After routine blood investigations, an excisional biopsy of the lesion was performed. Biopsy specimen was embedded in 10% formalin and sent to department of Oral Pathology. Routine histological examination with hematoxylin
and eosin stain were performed. The microscopic features of the lesion were consistent with PGCG. A large number of stromal fibroblastic cells and multinucleated giant cells were seen. Postoperative healing was uneventful. No recurrence of the lesion was found six months after surgery.

**DISCUSSION**

An epulis is a localized gingival growth, typically starting in the interdental papillae. The lesions which contain relatively little vascularity are focal fibrous hyperplasia and peripheral ossifying fibroma which are pink, smooth surfaced elevations that are usually asymptomatic. Those lesions which contain numerous vascular spaces (pyogenic granuloma and peripheral giant cell granuloma) are usually red smooth surfaced elevations and the degree of trauma to which they are subjected is often sufficient to cause focal ulceration and pain. The differential diagnosis of PGCG includes lesions with very similar clinical and histological characteristics, such as central giant cell granuloma, which are located within the jaw itself and exhibit a more aggressive behavior. Only radiological evaluation can establish a distinction. In some instances, the giant cell granuloma of the gingiva is locally invasive and causes destruction of the underlying bone. The early and precise diagnosis of these lesions allows conservative management without risk to the adjacent teeth or bone. In conclusion, for treating Peripheral Giant Cell Granuloma, a complete surgical excision along with its base and elimination of irritating factors seems satisfactory to prevent further recurrence.

**REFERENCES**