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CASE REPORT

Pyogenic Granuloma in Eight-Year-Old Child Associated with Bone Loss and Displacement of Tooth Bud: A Unique Case

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ABSTRACT

Pyogenic granuloma (PG) is one of the inflammatory reactive hyperplasia affecting the oral tissues. It is a relatively common mucocutaneous lesion seen in the oral cavity. It is predominantly seen in young females. Soft tissue enlargements of the oral cavity often represent a diagnostic challenge, because a diverse group of pathologic processes can produce such lesions. An enlargement may represent a variation of normal anatomic structures, inflammation, developmental anomalies, cyst and neoplasm. Here, we report an exceptional case of PG of unknown etiology in 8-year-old male child patient in alveolar crest associated with bone resorption and displacement of tooth bud.

Keywords: Inflammatory hyperplasia, Oral cavity, Pyogenic granuloma, Soft tissue enlargement.

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INTRODUCTION

The term 'Pyogenic granuloma' (PG) is a hyperactive benign inflammatory lesion commonly seen in the oral cavity. Hullihen's description[1] in 1844 was most likely the first PG reported in English literature, but the term 'Pyogenic granuloma' or 'granuloma pyogenicum' was introduced by Hartzell in 1904.[2] There are two kinds of PG namely lobular capillary hemangioma and nonlobular capillary hemangioma type, which differ in their histological features.[3] Apart from gingiva, it can occur on the lips, tongue, buccal mucosa, palate and so on.[4] This lesion develop rapidly, reach full size, and then remain static for a period of time and later becomes fibrotic and indistinguishable from a fibroma. Here, we report a rare case of PG in 8-year-old child patient discussing the clinical features, radiological features and histopathological features that distinguish this lesion from other similar oral mucosal lesions.

CASE REPORT

An 8-year-old male child patient reported to the Department of Oral Medicine and Radiology with a chief complaint of growth in the lower right back region of the mouth since 1 month. The growth was small initially but it gradually increased over a period of time to reach the present size. There was no history of trauma but patient gave history of a similar lesion of 2 months duration for which he had undergone surgical excision 1 month ago. Mild intermittent pain was associated with the growth which increased on chewing food. Patient reported difficulty in mastication as the extent of growth had reached the occlusal plane and used to bleed on being traumatized. Medical history was noncontributory. All vital signs were within normal limits. Extraoral examination revealed facial asymmetry due to solitary diffuse swelling was present in right side of cheek region (Fig. 1). Right submandibular lymph node was palpable, which was nontender and mobile. Intraorally on inspection a single, solitary reddish purple color,

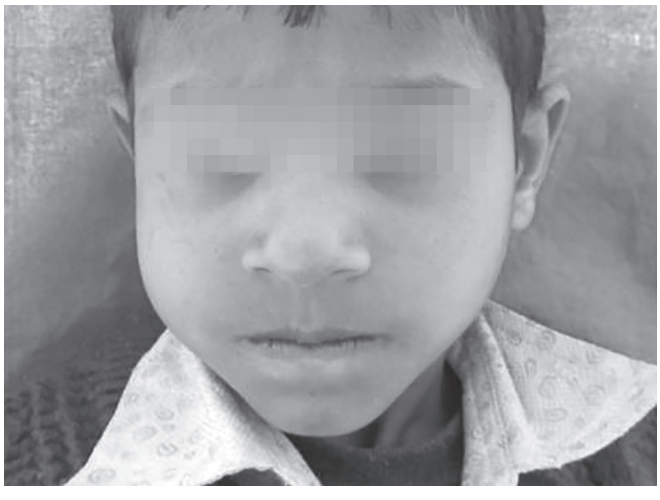

Fig. 1: Extraoral photograph showing facial asymmetry due to diffuse swelling present in right cheek region

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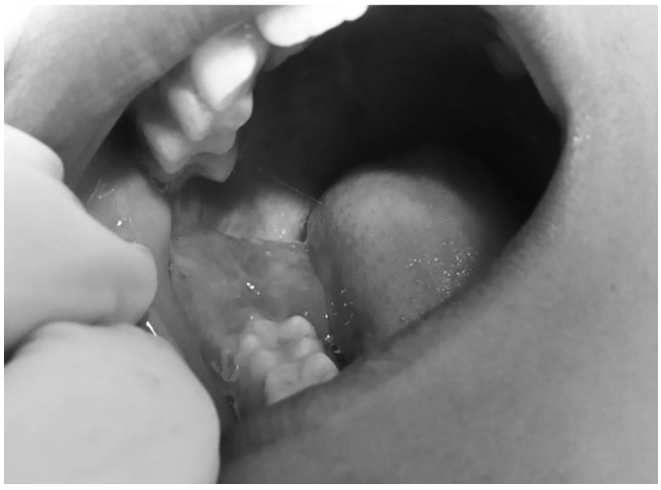

Fig. 2: Intraoral photograph showing a reddish color, exophytic growth measuring about 3 × 3 cm distal to 46

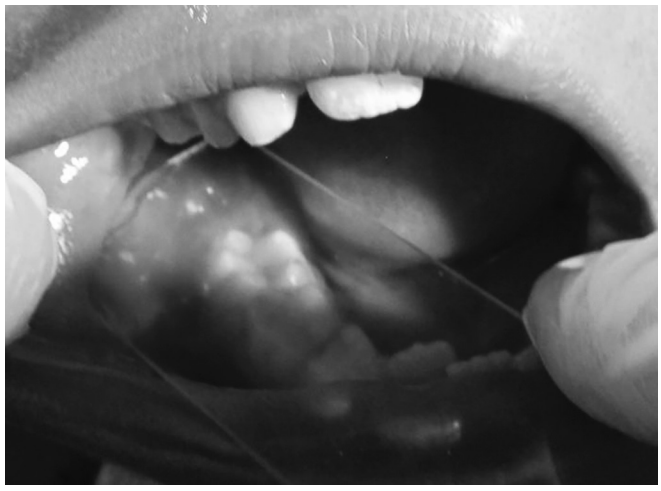

Fig. 3: Intraoral photograph shows blanching test

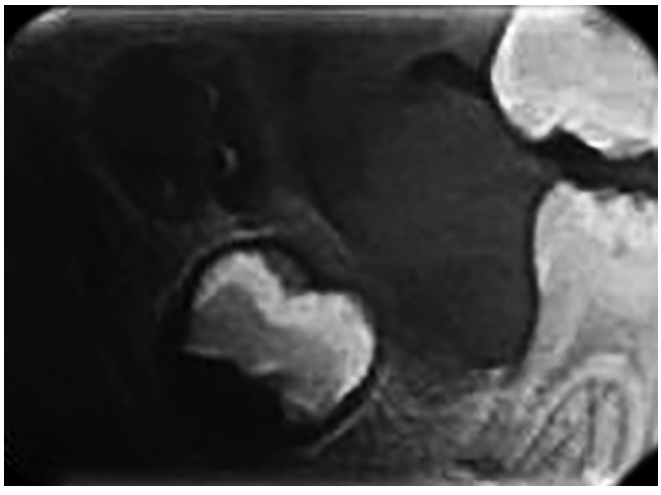

Fig. 4: Intraoral periapical radiograph of the lesion showing resorption of alveolar crestal bone and radiolucency occlusal to 47 tooth bud

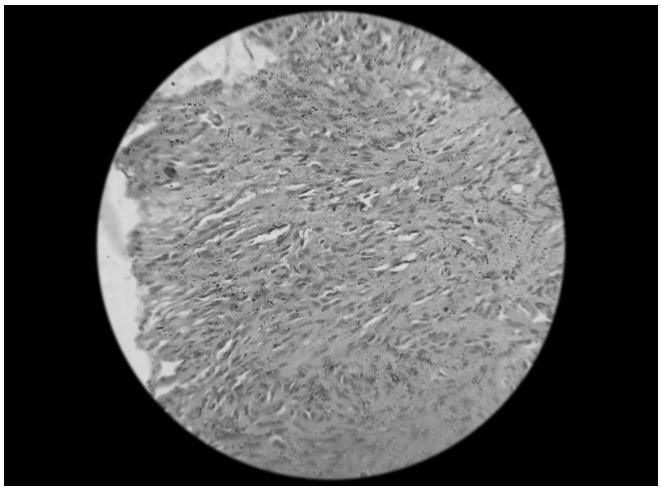

Fig. 6: Photomicrograph of the lesion showing hyperplastic, stratified squamous epithelium and connective tissue with numerous proliferating capillaries, dense mixed inflammatory infiltrate, and extravasated red blood cells (H&E stain; magnification 4×)

lobulated, smooth exophytic growth measuring about 3 × 3 cm present in mandibular posterior region distal to the first molar (Fig. 2). On palpation, the growth was firm

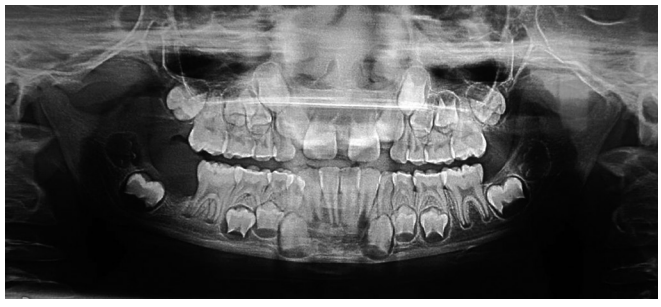

Fig. 5: Panoramic radiograph showing loss of crestal alveolar bone along with displacement of tooth bud of 47 and 48

and tender with sessile base. Bleeding on provocation and blanching test was positive (Fig. 3). Complete hemogram of the patient was within normal limit. Based on clinical examination and patient history, provisional diagnosis of peripheral giant cell granuloma was hypothesized. The differential diagnosis of the lesion should include PG, peripheral ossifying fibroma, hemangioma, parulis and angiosarcoma. Radiographs are advised for the lesion includes intraoral periapical radiograph (IOPAR) and orthopantomogram (OPG). Intraoral periapical radiograph of the lesion reveals resorption of alveolar crestal bone and radiolucency occlusal to 47 tooth bud, (Fig. 4) there is no calcification seen. Panoramic radiograph reveals loss of crestal alveolar bone distal to 1st molar which displace the tooth bud of 47, 48 (Fig. 5) and haziness occlusal to 47 tooth bud. Punch biopsy was done and send for histopathological examination, which reveals loose fibrillar connective tissue that comprised of numerous proliferating capillaries, dense mixed inflammatory infiltrate, and extravasated red blood cells (Fig. 6). The histopathology confirmed the diagnosis of PG. Patient was advised for surgical excision of the lesion.

DISCUSSION

Pyogenic granuloma is a benign lesion. Bhaskar et al[5] in their study observed that oral PG comprised about

1.85% of all oral pathoses. The incidence of PG has been described as between 26.8 to 32% of all reactive lesions.[6] It is now universally accepted that this lesion is produced as a result of exaggerated localized connective tissue reaction to a minor injury or any underlying irritation.[7] This irritating factor can be calculus, poor oral hygiene, nonspecific infection, over hanging restorations, cheek biting, and various kinds of drugs, etc.[8] Because of causation factor, the underlying fibrovascular connective tissue becomes hyper plastic and there is proliferation of granulation tissue which leads to the formation of PG. Pyogenic granuloma may occur in all ages but is predominantly seen in young adults and second decade of life in young adult females possibly because of vascular effects of female hormones.[9,10] A study by Skinner et al[11] revealed a 3:2 predilection for females over male. Studies by Zain et al[12] in Singapore, populations have also shown the greatest incidence of PG in the second decade of life. But in our case, this lesion was occur in 8-year-old child patient. According to Vilmann et al,[13] majority of the PG are found on the marginal gingiva with only 15% of the tumors on the alveolar part. In present case, lesion was occurring in mandibular posterior region. Pyogenic granuloma grows in size from few millimeters to several centimeters in size but rarely exceed more than 2.5 cm size. Some of the PG grow rapidly and attain large sizes. In this case, its size is 3 × 3 cm. Due to large size of the lesion panoramic radiographs are advised to rule out bony destruction and extent of the lesion with surrounding structures. Definitive diagnosis of PG can be made by histopathological examination of the biopsied tissue which shows a highly vascular proliferation that resembles granulation tissue. Treatment of PG involves a complete surgical excision. Recurrence rate for PG is said to be 16% of the treated lesions and so re-excision of such lesions might be necessary.[14] Recurrence is believed to result from incomplete excision, failure to remove etiologic factors or re-injury of the area, as we seen in our case so re-excision was necessary. Each healthcare provider should develop a systematic routine in order to provide a thorough examination.[15]

CONCLUSION

Although PG is the common benign lesion of oral cavity. Here, we report a rare case of PG in mandibular posterior region in child patient which causes bone loss and displacement of tooth bud which is common with 'peripheral giant cell granuloma' and rare in 'PG'. Panoramic radiograph helps in the detection of these lesions, their extent and its correlation with surrounding structures. This finding was confirmed from the histopathological examination which can be considered as excellent reliable procedure to confirm the definitive diagnosis. From the present case report, it is concluded that such kind of cases needs to be reported as it highlights the importance of keeping the rarities in mind along with common lesions while making a diagnosis.

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