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Case Report

Beyond a simple gingival enlargement: peripheral ossifying fibroma in a 12-year-old

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ABSTRACT

Lesions affecting the gingiva are frequently encountered and constitute a substantial part of cases evaluated in oral pathology. Most of these lesions are reactive in nature and may exhibit a wide range of clinical presentations. However, certain developmental and neoplastic conditions can also involve the gingiva, which may lead to difficulties in establishing a clear clinical and histopathological diagnosis. This article presents a case of 12-year-old male patient with a chief complain of a painless slowly enlarging mass on the lower left mandibular region. The fibrous mass was surgically excised and the tissue sample was sent for biopsy examination which further revealed the lesion to be peripheral ossifying fibroma.

Keywords: Gingival disease, Pediatric patient, Reactive lesions, Peripheral ossifying fibroma

INTRODUCTION

Most soft tissue tumour-like lesions in the oral cavity arise due to reactive hyperplasia or neoplastic processes. However, the majority of these localised tissue enlargements are reactive in origin, occurring as a response to chronic irritation or trauma, rather than representing true neoplasms.[1] A variety of localised reactive lesions may develop on gingiva, such as focal fibrous hyperplasia, pyogenic granuloma, peripheral giant cell granuloma, and peripheral ossifying fibroma.[2] Peripheral ossifying fibroma is a gingival overgrowth characterised by highly cellular fibrous connective tissue that contains varying amounts of mineralized components, including bone, cementum-like material, and areas of dystrophic calcification. Some investigators have categorized this lesion under fibrous epulis. Lee included certain lesions of this type within the fibrous epulis group, while suggesting the term calcifying fibroblastic granuloma for others. Over time, different terminologies have been used to describe this lesion, including soft fibroma, peripheral fibroma with calcification, peripheral odontogenic fibroma and peripheral ossifying fibroma. In American texts, two most commonly used terms were peripheral ossifying fibroma and peripheral odontogenic fibroma but Gardner in 1982, proposed that the term peripheral odontogenic fibroma should be reserved for the extraosseous counterpart of the central odontogenic fibroma, as it represents a lesion distinct from peripheral ossifying fibroma. He also recommended that among the various terms previously used in literature, peripheral ossifying fibroma should be retained as the appropriate designation for the lesion.[3-5] Peripheral ossifying fibroma can be seen in in any age group but is more commonly seen in second and third decade of life and it is more commonly reported in females than males. In this paper we discuss a case of peripheral ossifying fibroma in a 12-year-old child.

CASE REPORT

A 12-year-old male patient presented to the Department of Pediatric and Preventive Dentistry with a chief

complaint of a gingival swelling in the lower left posterior region from last one month (Figure 1). The patient reported a history of a gradually enlarging painless mass in the left mandibular tooth region. His medical and family history was non-contributory. Intraoral examination revealed a pale-pink, firm, pedunculated gingival enlargement with approximate 1.3×1×0.9 cm in size located on the buccal aspect of the mandibular left second premolar (irt 35). Aside from mild localised calculus, no other significant oral findings were noted.

Diagnostic investigations included a radiovisiography (RVG) of the affected area (IRT 35) and a complete blood count (CBC) (Figure 2 and 3). Based on the clinical presentation, a provisional diagnosis of Fibroma was established, and surgical excision was planned.

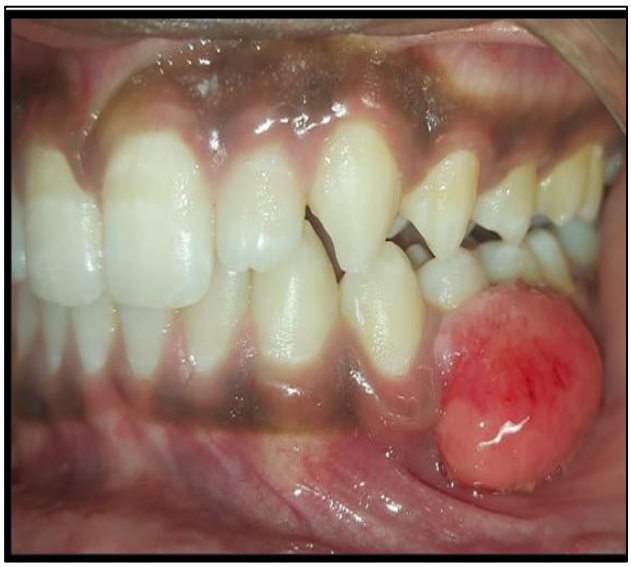

Figure 1: Intraoral picture of gingival mass i.r.t 35.

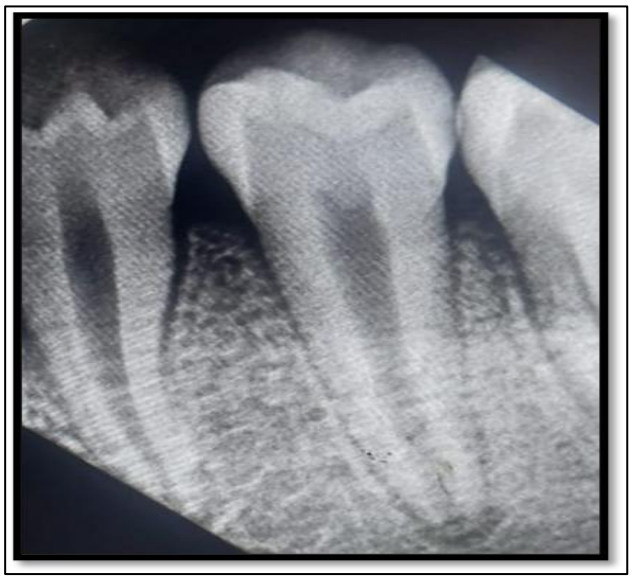

Figure 2: Radiographic image i.r.t 35.

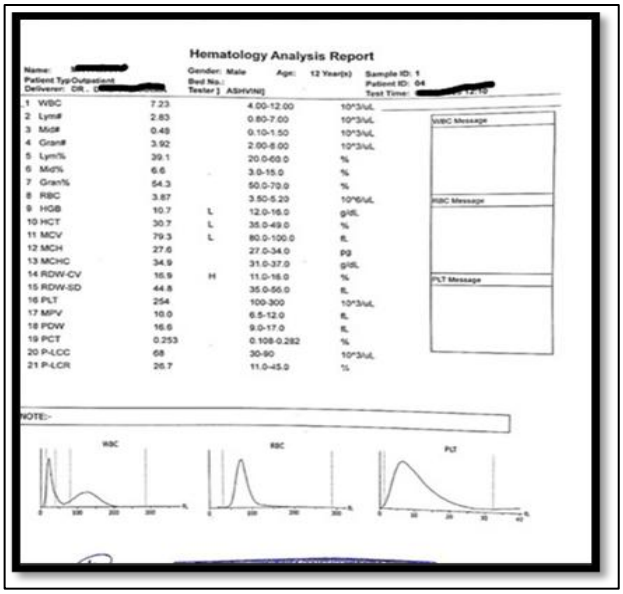

Figure 3: Complete blood count.

Under local anaesthesia (Lignox 2% A), a silk traction suture was used to secure the lesion (Figure 4), ensuring clear visibility of the margins to guide the excision with surgical scalpel number 11 (Figure 5). Post excision, oral prophylaxis was performed on teeth 34, 35 and 36. The surgical site was irrigated with povidone-iodine (Betadine) (Figure 6) and periodontal dressing (Coe-Pak) was given (Figure 7). Following the complete surgical removal of the mass, the tissue sample was submitted to the Department of Oral Pathology and Microbiology for histopathological analysis (Figure 8). The histopathological examination revealed a thin stratified squamous epithelium. The underlying connective tissue stroma consists of a mass of fibrous connective tissue containing numerous spindle-shaped and stellate fibroblasts, along with multiple multinucleated giant cells. These giant cells are predominantly observed in the peripheral areas of the lesion. The connective tissue also showed proliferation of fibroblasts and budding endothelial cells. Calcifications within the stroma were present as a single or multiple interconnecting trabeculae of bone. Areas of extravasated red blood cells were also observed. So, the final diagnosis made according to the clinical histopathological correlation was suggestive of peripheral ossifying fibroma. Differential diagnosis includes fibrous epulis, pyogenic granuloma, peripheral odontogenic fibroma, peripheral cementifying fibroma etc.

The patient was recalled after seven days for the removal of the periodontal dressing (Figure 9). He was instructed to maintain meticulous oral hygiene and was prescribed a therapeutic mouthwash for 15 days. The healing process was uneventful, resulting in a recovery with no visible scarring. Follow up examinations were conducted at one and three and six months postoperatively, showing no signs of recurrence (Figure 10 A-C). However, the patient was lost to further follow up thereafter.

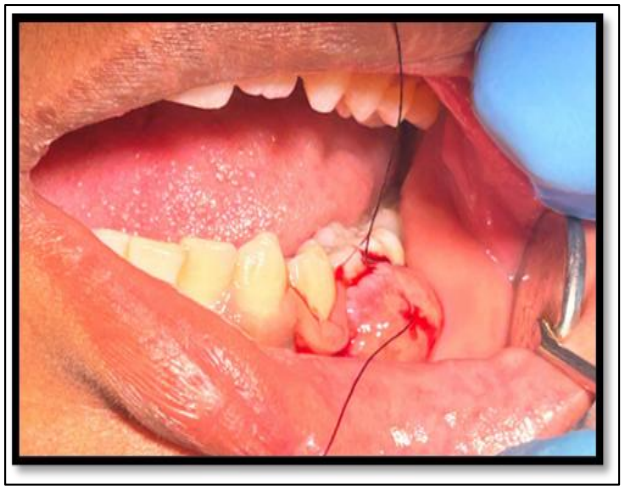

Figure 4: Silk thread used to hold the lesion.

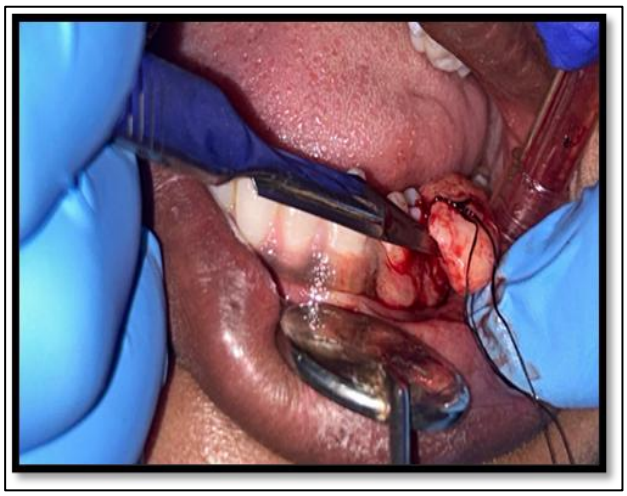

Figure 5: Surgical excision of the lesion.

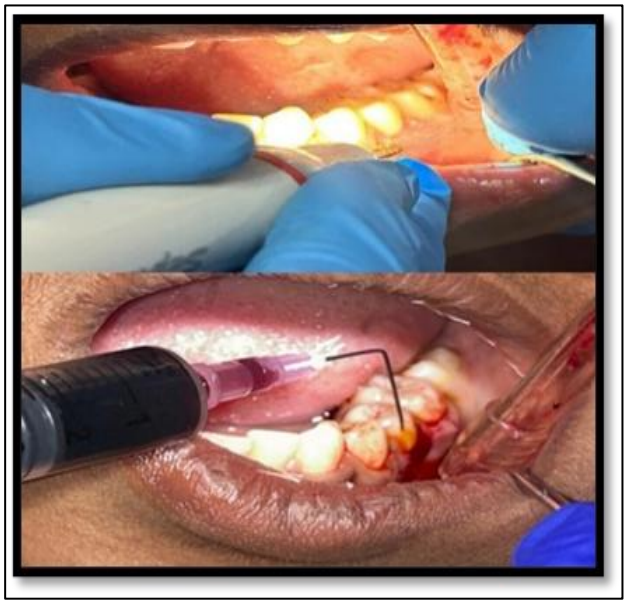

Figure 6: Post excision scaling and irrigation of the affected area.

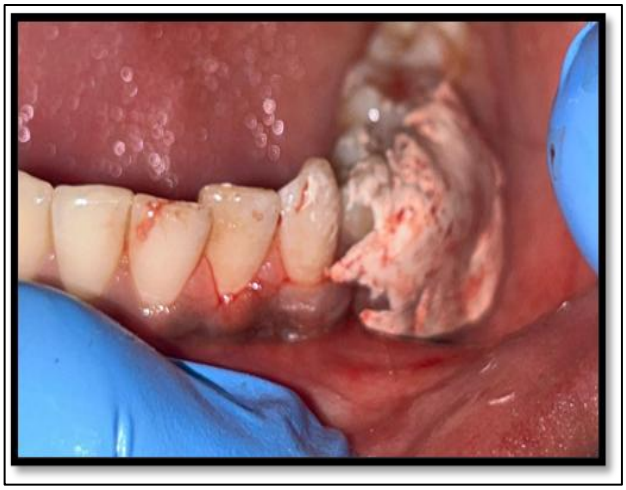

Figure 7: Periodontal dressing (Coe-Pak).

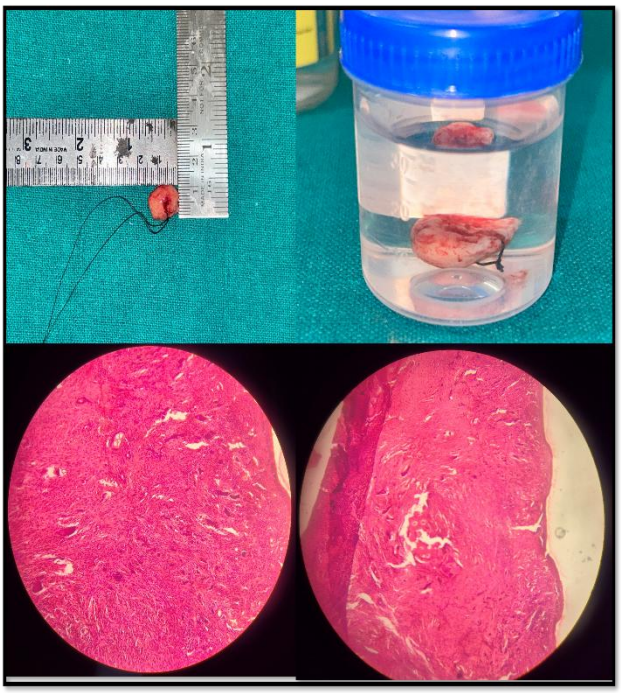

Figure 8: Excised tissue sample and histology slides.

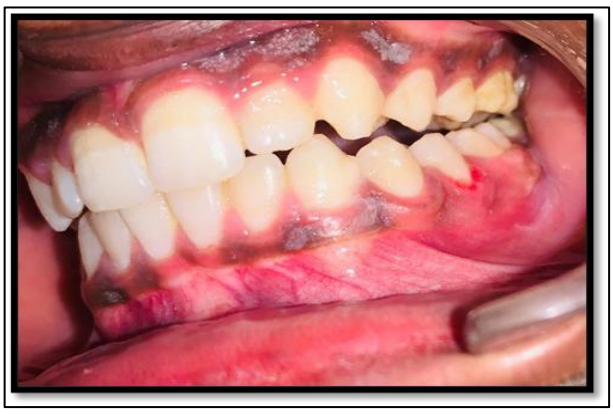

Figure 9: Seven days follow up.

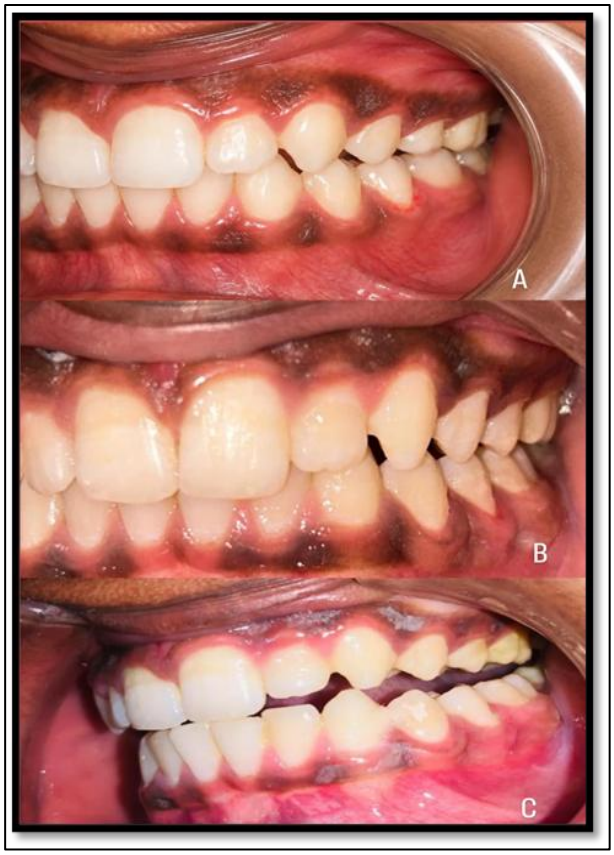

Figure 10 (A-C): A- one month follow up, B- three month follow up, and C-six month follow up.

DISCUSSION

Various terms have been used to describe fibroblastic gingival lesions. Including epulis, peripheral fibroma with calcification, peripheral cementifying fibroma, peripheral ossifying fibroma, peripheral fibroma with cementogenesis, and many more. The use of multiple terminologies reflects the considerable controversy and lack of consensus regarding their classification.[2]

Carl Otto Menzel first described ossifying fibroma in 1872, and the term was later introduced by Montgomery in 1927. In 1982, John Gardner proposed the term peripheral ossifying fibroma. Two forms of ossifying fibroma have been reported in the literature, peripheral ossifying fibroma and central ossifying fibroma. The peripheral type arises exclusively in the soft tissues covering the alveolar process of the jaws, whereas the central types originate within the bone from the endosteum or the periodontal ligament adjacent to the root apex. However, their clinical features differ significantly.[6]

It has been hypothesized that this type of lesion most likely originates from the cell of the periodontal ligament. Various factors such as trauma and chronic local irritants including plaque, calculus, ill-fitting restorations, and dental appliances have been suggested in the literature as contributing factors.[7] Clinically, POFs most frequently occurs in maxillary anterior region and are solitary, red to pink, pedunculated or sessile, nodular growth commonly seen in gingival interdental papilla, most commonly reported during the second and third decades of life with female predilection.

In the present case, only mild localised calculus was observed, which was unlikely to have served as a significant irritational factor. The patient described in this case report was a 12-year-old male. Several studies have been documented the occurrence of this lesion in the primary and mixed dentition period, and rare cases have also been reported in infants.[8] For instance, Siddiqui et al reported a case of POF in a 5-year-old female child.[6] Similarly, Cuisia et al analysed the clinical features of Peripheral ossifying fibroma in 134 cases. Their study reported a higher prevalence in females, with a marked predilection for the anterior maxillary region.[9] However, in the present case report, the lesion occurred in the mandibular premolar region which is considered relatively uncommon. Pandey et al also described a case series in which POF was observed in the mandibular posterior region of a 22-year-old male patient,[10] while Poonancha et al reported a similar lesion in the maxillary posterior of a 12-year-old female patient.[11]

In the present case, RVG did not reveal any significant findings. However, radiopaque foci within the soft tissue may sometimes be observed, and in larger or long-standing lesions, underlying bony defects can also occur. Poonacha et al reported the presence of a soft tissue shadow on the radiograph whereas Pandey et al observed a saucer shaped defect. In contrast, Rallan et al and Bhatnagar did not report any radiographic changes.[10-13]

Commonly, the histopathological features include dense fibrocellular proliferation accompanied by focal deposits of calcified material, which may range from irregular dystrophic or metaplastic calcifications to laminated concentric deposits resembling Liesegang rings. The extent of mineralised deposits generally correlates with the degree of maturation of POF.[8] Microscopically, the connective tissue in the present case showed numerous spindle and stellate shaped fibroblasts, along with multiple multinucleated giant cells seen in peripheral region. Calcifications within the stroma were present in the form of single or multiple interconnecting trabeculae of bone.

Treatment consists of conventional surgical excision, scaling and debridement of the affected area.[8] Alternative treatment modalities include use of various lasers such as diode, CO_2, Er:YAG, and Nd:YAG lasers, cryosurgery and electrosurgery.[14,15]

CONCLUSION

Distinguishing among most reactive gingival lesions on clinical grounds alone is often challenging, particularly

during early stages; therefore, proper histopathological examination is essential for a definitive diagnosis. Although peripheral ossifying fibroma is most commonly observed in the second and third decades of life, it may occasionally occur in young children, making such cases noteworthy and worthy of further documentation and study.

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