A UNIQUE STAR SHAPED PERIPHERAL OSSIFYING FIBROMA MIMICKING ORAL CARCINOMA : A RARE CASE REPORT

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Abstract

Introduction: The gingiva is often the site of localized growths that are considered to be reactive rather than neoplastic in nature. Peripheral ossifying fibroma is one such reactive lesion. This case report documents a case of a 15-year-old girl with a large peripheral ossifying fibroma in the posterior maxilla showing significant growth and interference with occlusion. **Methods:** Review of literature concerning etiology, pathogenesis and management of the resulting gingival enlargement is discussed. **Conclusion:** Many of these lesions are difficult to be identified clinically and can be identified as specific entity only on the basis of typical and consistent histomorphology. Surgical treatment of the POF in adolescents should be initiated soon, given the high recurrence rate, because although gingival enlargement that occurs can be treated, the alveolar bone loss is irreversible, compromising tooth supporting apparatus permanently.

Keywords: Peripheral ossifying fibroma, reactive lesion, localized gingival

Introduction

Peripheral ossifying fibroma (POF) is a reactive soft tissue growth that is usually seen on the interdental papilla. It may be pedunculated or broad based, usually smooth surfaced and varies from pale pink to cherry red in color. It is believed to comprise about 3-7% of all gingival growths and to arise from the gingival corium, periosteum, and the periodontal membrane.[1,2] The size of the lesion is usually small, located mainly in the anterior maxilla with a higher predilection for females, and it is more common in the second decade of life. It has also been reported that it represents a maturation of a pre-existing pyogenic granuloma or a peripheral giant cell granuloma.[1]

Case Report

A 15-year-old girl reported with the chief complaint of soft tissue growth in the palate. Intraoral examination revealed a painless pedunculated, star shaped mass on the palatal aspect of the maxillary right first permanent molar extending towards the occlusal surface [Fig.1].The lesion was abnormally large about 3cm mesiodistally and 3cm buccopalatally and the side of the lesion facing the occlusal surface was focally ulcerated. The maxillary first permanent molar was carious and pulpally involved. Patients oral hygiene was poor with abundant plaque and calulus deposits. History revealed that the lesion started growing on its own since she first noticed it about a month back when it was a small nodule. The lesion was painless and occasionally bled on its own or when traumatized with toothbrush and in its present state was interfering with occlusion. There was no significant medical and familial history. Radiograph revealed bone loss between maxillary second premolar and first molar [Fig.2].

Treatment: The patient initially underwent phase 1 periodontal therapy that comprised

scaling, root planning and oral hygiene instructions. Phase 2 therapy involved periodontal surgery in first quadrant, utilizing an excisional biopsy of the growth [Fig. 3,4] combined with open-flap debridement and thorough curettage of the adjacent periodontal ligament, to prevent recurrence[Fig. 5,6]. The tooth was endodontically restored[Fig.7] Six month follow-up of the case showed normal healing of the area and no evidence of recurrence[Fig. 8,9].

Histopathologic Findings: The microscopic evaluation of excised overgrowth revealed lesion revealed prominent area of highly cellular fibrous connective tissue showing collagen fibers and proliferating plump fibroblasts, and areas of trabecular bone lined by osteoblasts. The covering stratified squamous epithelium was parakeratinized with focal areas of acanthosis [Figure10]. The diagnosis was POF according to both clinical and histopathological patterns.

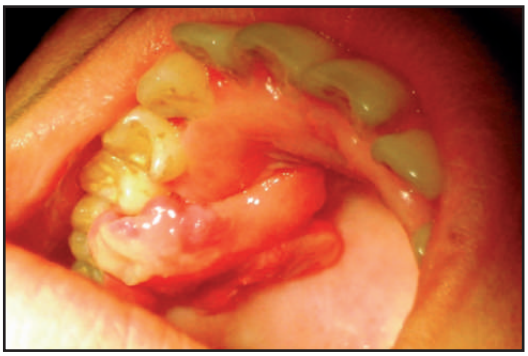

Fig.1- Preoperative intraoral view of the maxillary arch showing unusual star shaped gingival enlargement.

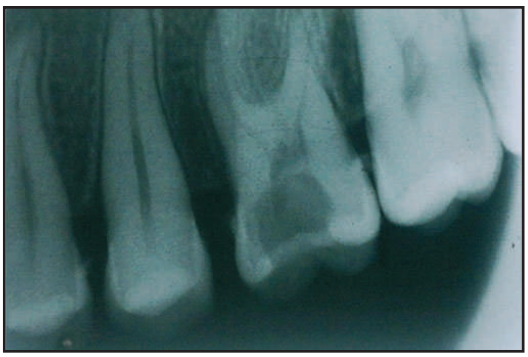

Fig.2- Preoperative radiograph showing bone loss and pulpally involved first molar

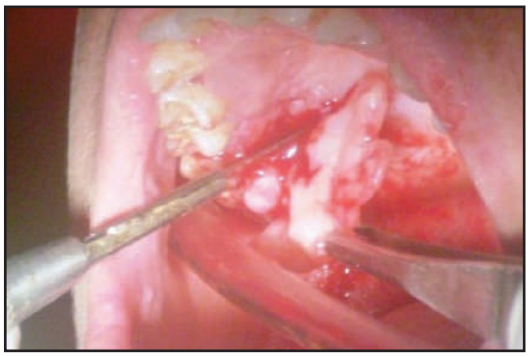

Fig.3- Excisional biopsy of the growth

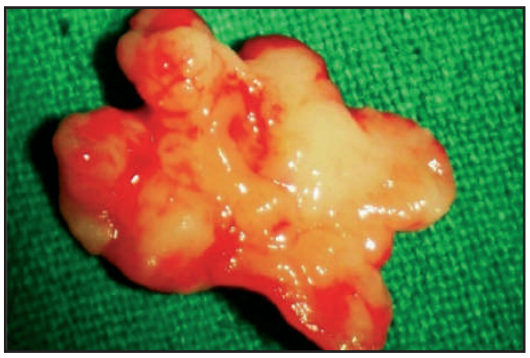

Fig. 4-Excised specimen

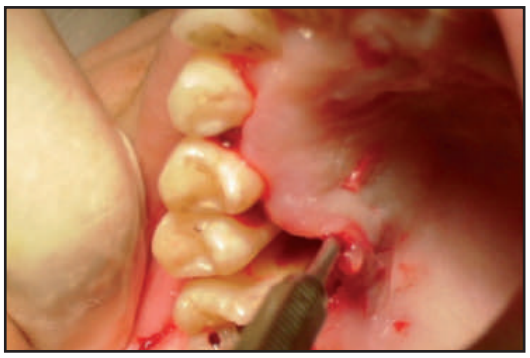

Fig.5- Open-flap debridement.

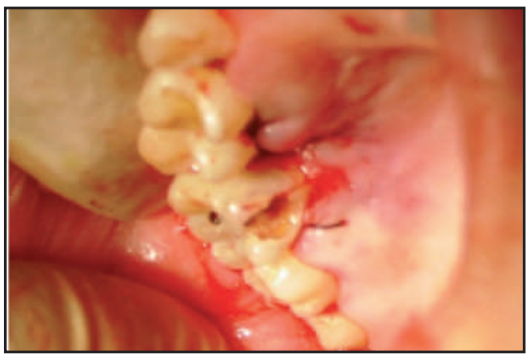

Fig.6- Immediate post operative view.

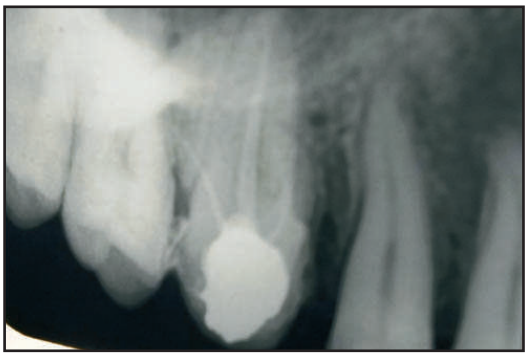

Fig.7 - Postoperative radiograph

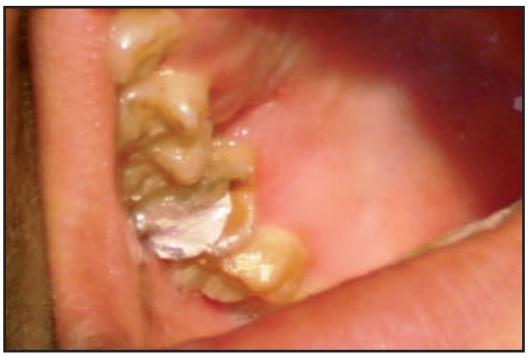

Fig.8- Palatal view of the maxillary arch, 2 weeks after surgery.

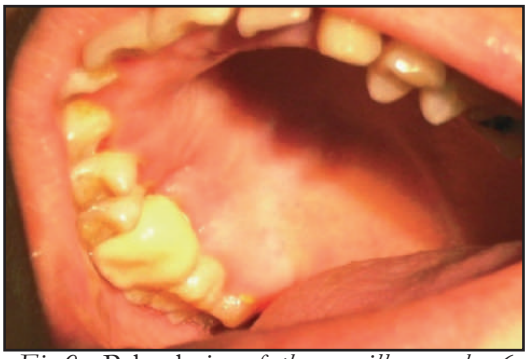

Fig.9 - Palatal *view of the maxillary arch, 6 months after surgery.*

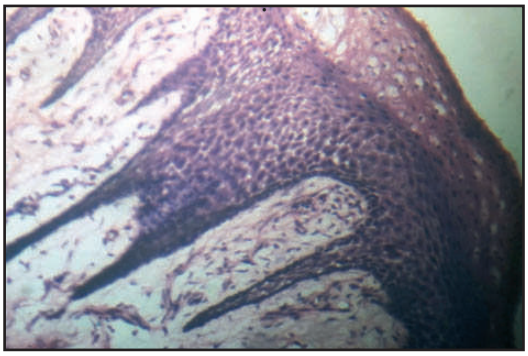

Fig.10- Photomicrograph of histopathological specimen characterized by the presence of connective tissue with high cellularity and calcifications.

Discussion

Intraoral ossifying fibromas have been described in the literature since the late 1940s. When presented clinically with a gingival lesion, it is important to establish a differential diagnosis. Gingival lesions that imitate POF are peripheral giant cell granuloma, pyogenic granuloma, fibroma, calcifying epithelial odontogenic cyst, calcifying odontogenic cyst, etc.[2] In general, the pyogenic granuloma presents as a soft, friable nodule that bleeds with minimal manipulation, but tooth displacement and resorption of alveolar bone are not observed. Although peripheral giant cell granuloma has clinical features similar to those of POF, the latter lacks the purple or blue discoloration commonly associated with peripheral giant cell granuloma and radiographically shows small flecks of calcification. Thus, the diagnosis of the POF based only on clinical aspects can be difficult and histopathological examination of the surgical specimen obtained by excisional biopsy is mandatory for an accurate diagnosis.[4]

The POF, as discovered in this case, is a focal, reactive, non-neoplastic tumour-like growth of soft tissue often arising from the interdental papilla. POF may present as a pedunculated nodule, or it may have a broad attachment base. These lesions can be red to pink with areas of ulceration, and their surface may be smooth or irregular.[5] Although most of lesions are usually <1.5 cm, the occurrence of the POFs in adolescents can exhibit an exuberant growth rate and reach significant size in a relatively short period of time, as shown in the present case.[2] Inflammatory hyperplasia originating in the superficial periodontal ligament is considered to be a factor in the histogenesis of the POF. These findings include the exclusive occurrence on the gingiva, the proximity of gingiva to PDL, and the inverse correlation of age distribution of lesions with the number of the lost teeth and their corresponding PDL.[6,7] Dental calculus, plaque, microorganisms, dental appliances, and restorations are considered to be the irritants triggering the lesion.[8] Almost 60% of the lesions occur in the maxilla and mostly occur

anterior to molars. The lesion is most common in the second decade of life affecting mainly females. [9] Hormonal influences may play a role, given the higher incidence of POF among females, increasing occurrence in the second decade and declining incidence after the third decade.[7]

In the current case, the family experienced distress related to the suggestion of squamous cell carcinoma by her dentist (owing to the lesions ulcerated and unusual appearance) before referral for treatment and definitive diagnosis. Zhang and others noted that cancer was included in the differential diagnosis in only 2% of cases.[3] Thus the family should be counseled to prevent undue distress during the waiting period between differential diagnosis and definitive histopathologic diagnosis.

Histologically, the POF appears to be a nonencapsulated mass of cellular fibroblastic connective tissue of mesenchymal origin, covered with stratified squamous epithelium, which is ulcerated in 23%–66% of cases.[1,9] POFs contain areas of fibrous connective tissue, endothelial proliferation and mineralization. In the case reported, the histopathological feature of the POF was characterized by the presence of connective tissue with high cellularity and calcifications.

Treatment requires proper surgical intervention that ensures deep excision of the lesion including periosteum and affected periodontal ligament. Thorough root scaling of adjacent teeth and removal of other sources of irritants should be accomplished. The recurrence rate varies from 7 to 20%,which has been considered high for reactive lesions and it probably occurs due to incomplete initial removal, repeated injury, or persistence of the local irritants.[10,11] Thus as in the case reported, early surgical treatment of the POF in adolescents including removal of identifiable etiological factors is required to obtain satisfactory gingival repair, prevent risk of tooth and bone loss and to minimize the possibility of recurrence.

Conclusion

POF is a slowly progressing lesion, the growth of which is generally limited. A slowly progressive, localized soft tissue overgrowth in the anterior maxilla of a female adolescent should raise suspicion of POF. This differential diagnosis was discussed with the patient and her mother in an attempt to alleviate fears of squamous cell carcinoma.

Clinical identification of the lesion is important as although other such overgrowths can be managed by only external bevel gingivectomy excision, this lesion requires definitive open flap debridement along with thorough curettage, and proper isolation and complete removal of local etiological factors. Close postoperative follow-up is required because of the growth potential of incompletely removed lesions and the high recurrence rate.

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