Case Report

A Prototypical Case of Peripheral Ossifying Fibroma

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Abstract

Gingival overgrowths are the most commonly found lesions of the oral cavity. They can be, localized or generalized, solitary or multiple some of which include irritational fibroma and peripheral ossifying fibroma (POF). Most of these lesions are reactive in nature and might present with similar clinical features. Hence, differentiation and final diagnosis of these lesions with clinical presentation alone is difficult, and therefore, a histopathological analysis of the same might help in achieving a final diagnosis. This report describes a case of POF in a 60-year-old female involving the maxillary anterior region. An excisional biopsy was carried out for the lesion which confirmed the clinical diagnosis of POF.

Keywords: Fibro-osseous lesion, Gingival enlargement, Peripheral cementifying fibroma, Peripheral ossifying fibroma, Solitary gingival overgrowth.

Introduction

Localized gingival growths are one of the most frequently encountered lesions in the oral cavity. Peripheral ossifying fibroma (POF) is a focal, reactive, non-neoplastic lesion of connective tissue origin that often arises from the interdental papilla.[1] Although the etiology and pathogenesis remain unclear, trauma and local irritants, such as dental plaque, calculus, microorganisms, masticatory forces, and poor restorations, have been implicated in the etiology of POF.[2] It is typically seen as a gingival growth on interdental papilla and comprises about 9% of all gingival growths. Females are more commonly affected, and anterior maxilla is the most prevalent location.[3]

Case Report

A 60-year-old female patient reported a chief complaint of a painless growth arising from her gums in the upper left front tooth region for 2 months. The patient gave a history of trauma to the upper front region 2 months ago after which the growth had initiated and since then had gradually increased in size and attained the present size. Furthermore, the patient reported occasional bleeding on brushing as well as inability to approximate her lips due to the growth. The patient was systemically healthy.

Intraoral clinical examination revealed generalized pale pink gingiva with a well-demarcated, non-tender, firm, focal, sessile nodular growth arising from the interdental papilla of the maxillary left central and lateral incisors and partially covering the crowns of both the incisors. Pathological migration of the central and lateral incisors was noted.

The roughly oval-shaped mass appeared whitish-pink with a central ulcerated surface. The texture appeared to be smooth and measured about 1.5 cm × 1 cm in size (Figure 1). Bleeding on probing was noted.

An intraoral periapical radiograph of the maxillary left central and lateral incisors showed interdental bone loss. Clinically, differential diagnoses of pyogenic granuloma, peripheral odontogenic fibroma, and peripheral giant cell granuloma were made. A provisional diagnosis of irritational fibroma was made.

Treatment

Scaling and root planing was performed for the patient followed by instruction in oral hygiene. A routine hemogram was advised before surgical excision. After 2 weeks, the growth was excised conservatively under local anesthesia to prevent the development of an unsightly gingival defect in the region, followed by curettage of the area (Figure 2). The excised tissue was sent for histopathological examination.

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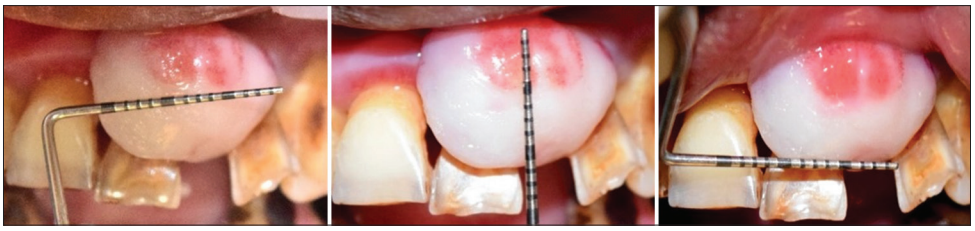

Figure 1: Pre-operative lesion measuring 1.5 cm × 1 cm

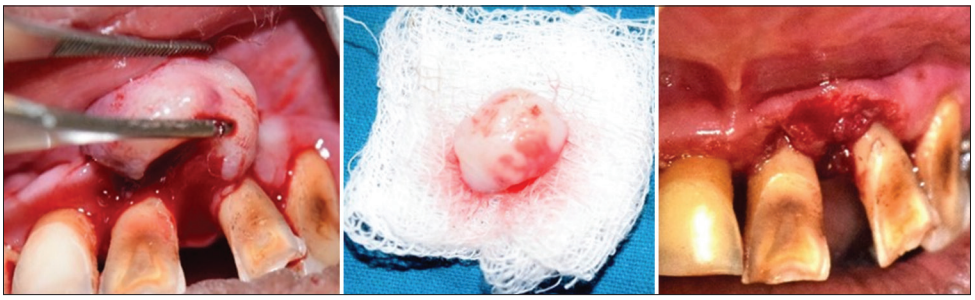

Figure 2: Surgical excision

Histopathologic examination

Microscopic examination of H and E-stained section shows parakeratinized stratified squamous epithelium of irregular thickness with focal areas of ulceration.

Connective tissue is densely fibrous with haphazardly arranged collagen fibers and dense inflammatory cells infiltrate predominantly of lymphocytes and plasma cells.

Areas of dense fibrosis and focal areas of dystrophic calcifications were seen. Variable-sized blood vessels lined by endothelial cells along with areas of hemorrhage are seen. Numerous eosinophilic areas resembling osteoid were evident (Figure 3).

The patient was recalled after 1 month for evaluation and showed uneventful healing. No recurrence of the growth was noted at the recall visits (Figure 4).

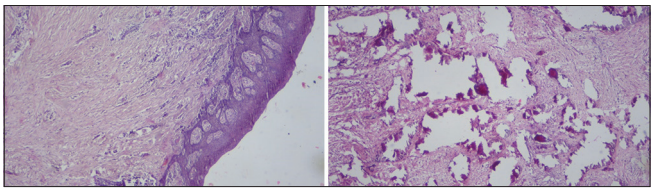

Figure 3: Histopathological examination showing areas of dense fibrosis and focal areas of dystrophic calcification

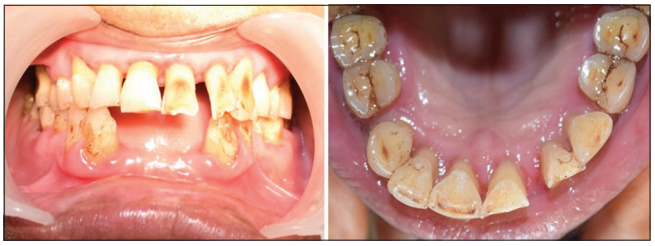

Figure 4: Post-operative follow-up after 1 month

Discussion

Intraoral ossifying fibromas have been described in the literature since the late 1940s. Different lesions with similar clinical presentation make it difficult to arrive at a correct diagnosis. Considerable confusion has prevailed in the nomenclature of POF with various synonyms being used, such as peripheral cementifying fibroma, ossifying fibroepithelial polyp, peripheral fibroma with osteogenesis, peripheral fibroma with cementogenesis, peripheral fibroma with calcification, calcifying or ossifying fibrous epulis, and calcifying fibroblastic granuloma.[4]

Ossifying fibroma occurs mostly in craniofacial bones and is generally categorized into two types: central and peripheral. The central type of ossifying fibroma arises from the endosteum or the periodontal ligament (PDL) adjacent to the root apex and expands from the medullary cavity of the bone. On the other hand, the peripheral type shows a contiguous relationship with the PDL, occurring solely on the soft tissues overlying the alveolar process.[5,6]

The etiopathogenesis of POF is uncertain, although an origin from the cells of the PDL has been suggested. The reasons for considering a PDL origin for POF include exclusive occurrence of POF in the gingiva (interdental papilla); the proximity of the gingival lesion to the PDL; the presence of oxytalan fibers within the mineralized matrix of some lesions; age distribution, which is inversely related to the number of lost permanent teeth; and the fibrocellular response in POF, which is similar to the other reactive gingival lesions of PDL origin.[1,7]

POF occurs more commonly in women and in the second decade, hence the role of hormones has also been questioned. The clinical features of POF were described by Buchner and

Hansen that consist of a localized growth on the gingiva with a pedunculated or sessile base. Approximately 60% of POFs occur in the maxilla and they are more often found in the anterior region, with 55–60% presenting in the incisor-cuspid region. It usually measures <1.5 cm and rarely reaches more than 3 cm in diameter, but lesions of 6 and 9 cm have also been reported. The clinical findings of the current case correlate with the literature.[8]

It has been suggested that the POF represents a separate clinical entity rather than a transitional form of pyogenic granuloma, PGCG, or irritation fibroma.[9] Irritational fibromas are usually very small (from a few millimeters to 1 cm) and only occasionally show calcification. However, some researchers believe that POF is related to pyogenic granuloma and is probably a mature pyogenic granuloma containing fibrosis and calcification.[10] Eversole and Rovin stated that, with the similar sex and site predilection of pyogenic granuloma, PGCG and POF, as well as similar clinical and histologic features, these lesions may simply be varied histologic responses to irritation.[9,11] Therefore, based on its clinical appearance, a provisional diagnosis of irritational fibroma was made as the patient gave a history of trauma and a differential diagnosis of pyogenic granuloma, PGCG was made.

Therefore, confirmatory diagnosis is based on the histopathologic evaluation of the biopsy specimens. The following features are usually observed:[12]

- Intact or ulcerated stratified squamous epithelium
- Benign fibrous connective tissue with varying number of fibroblasts
- Sparse to profuse endothelial proliferation
- Mineralized material consisting of mature lamellar or woven osteoid
- Acute and chronic inflammatory cells

Histologically, the POF appears to be a non-encapsulated mass of cellular fibroblastic connective tissue of mesenchymal, covered with stratified squamous epithelium, which is ulcerated in 23%–66% of cases. POFs contain areas of fibrous connective tissue, endothelial proliferation, and mineralization. Mineralization can vary between cementum-like material, bone (woven and lamellar), and dystrophic calcification.[9]

Treatment modalities for any such lesions include surgical excision of the lesion followed by periodic re-evaluation for any recurrence.

Conclusion

POF is one of the inflammatory reactive hyperplastic lesions of the gingiva. Substantial overlap exists among the clinical presentation between various focal reactive overgrowths of the gingiva; therefore, histopathological evaluation is mandatory to delineate its diagnosis. Complete surgical excision is the preferred treatment and a close post-operative follow-up is needed because of its known recurrence rate (8–20%). Identification of any reactive lesions requires the formulation of differential diagnosis to enable accurate patient evaluation and management, as well as tactful discussion of the same to prevent unnecessary distress to the patient.

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