

PERIPHERAL OSSIFYING FIBROMA- A CASE REPORT

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ABSTRACT

Localized gingival growths are one of the most frequently encountered lesions in the oral cavity, which are considered to be reactive rather than neoplastic. Different lesions with similar clinical presentation make it difficult to arrive at a correct diagnosis. These lesions include pyogenic granuloma, irritation fibroma, peripheral giant cell granuloma, peripheral ossifying fibroma (POF). Among these lesions, an infrequently occurring gingival lesion is the POF. Considerable confusion has prevailed in the nomenclature of POF due to its variable histopathologic features. This is a case presentation of a 20-year-old female with gingival overgrowth in the maxillary anterior region. Clinically, the lesion was asymptomatic, firm, pale pinkish and sessile. Surgical excision of the lesion was done followed by histopathologic confirmation. Close post-operative follow-up was done as the rate of recurrence for POF being 8-20%.

Keywords: Cemento-ossifying fibroma, peripheral ossifying fibroma, cementum-like calcification, gingival overgrowth, ossifying fibroma

INTRODUCTION

Peripheral ossifying fibroma (POF) is a reactive, nonneoplastic focal overgrowth, widely considered to originate from the cells of the periodontal ligament, occurring as a response to irritants such as dental calculus, plaque, micro-organisms, dental appliances and restorations. Clinically, POF appears as a small, well-demarcated focal mass on the gingival with a sessile or pedunculated base, usually originating from an interdental papilla.¹ It accounts for 3.1% of all oral tumors and for 9.6% of gingival lesions.²

The lesion may occur at any age range, but exhibits a peak incidence between the second and third decade with women being affected more than men. About 60% of these tumours occur in the maxilla and more than 50% of all cases of maxillary POF are found in the incisors and canine areas. POF occurs as an occasional growth of the anterior region of the mandible and accounts for 3.1% of all oral tumours and 9.6% of the gingival lesions.

Most lesions are less than 2 cm in size, although larger ones occasionally occur. In majority of cases, there is no apparent underlying bone involvement visible on the radiograph. However, on rare occasions, there might be superficial erosion of bone. The recurrence rate of POF is considered to be high for a benign reactive proliferation.³ Though the etiopathogenesis is uncertain, an origin from cells of the periodontal ligament has been suggested.⁴

CASE REPORT

A 20-year-old female patient reported with the complain of discomfort during chewing and speaking due to a growth in the upper anterior region of the jaw, which started as a small growth approximately 6 months ago and gradually increased in size with time to attain present size. Her medical history was non-significant and no h/o any medication at that time. She had habit of chewing smokeless tobacco, since many years.

Intraoral examination revealed an approximately 2 cm × 2 cm sessile, oval shaped non-tender, firm, pale pinkish growth present on the interdental gingiva in relation to the palatal aspect of maxillary central incisor region. (Figure 1)The lesion was extending from distal of right lateral incisor to midline of left central incisor and up to the level of the occlusal surface, causing occlusal interference.

The differential diagnosis included fibrous hyperplasia, pyogenic granuloma and peripheral giant cell granuloma and peripheral odontogenic fibroma. Under local anaesthesia, the lesion was completely excised down to the bone to clear the cells of origin and the adjacent teeth were also cleaned to avoid any source of irritation for recurrence of the lesion and the biopsy specimen was submitted for histological analysis.

Histopathological evaluation showed a para-keratinised stratified squamous type epithelium. Connective tissue stroma consisted of plump to spindle-shaped fibroblasts interspersed with chronic inflammatory cells with fibrosis and proliferating endothelial lined capillaries. (Figure 2) Trabeculae of bone and globules of calcifications suggesting mineralisation were also seen within the connective tissue. (Figure 3). Histopathologic diagnosis of POF was made.

At 1 week post-operative visit, patient presented for periodontal dressing removal and follow-up examination. Recovery was uneventful with a satisfactory healing. Patient is on regular follow-up at 6 months post-operative without any recurrence.



FIGURE: 1 Palatal view of the lesion

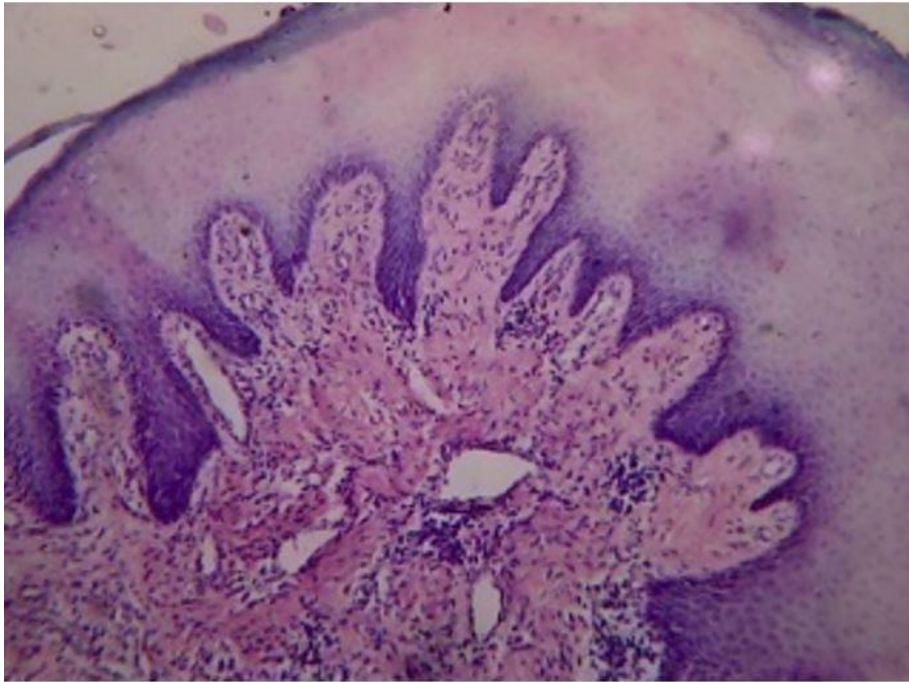


FIGURE: 2 Histopathological slide (10×) showing proliferating epithelium overlying the fibrocellular connective tissue stroma with mineralisation

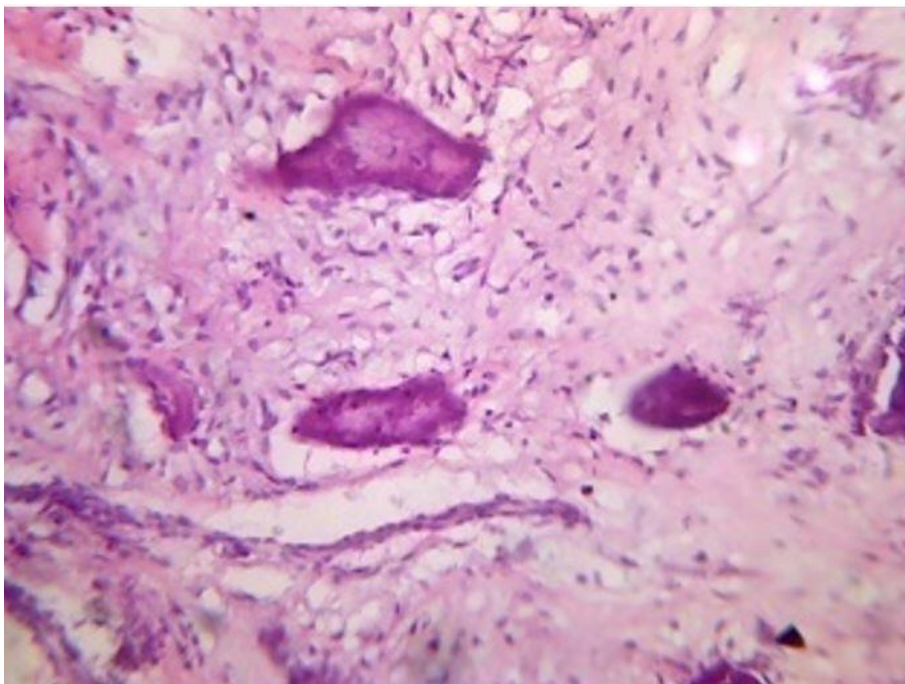


FIGURE:3 Histopathological slide (40×) showing basophilic cementum-like material and numerous plump fibroblasts.

DISCUSSION

POF has been reported in the literature since the mid-20th century. The term ‘peripheral ossifying fibroma’ was coined by Eversole and Rovin. They reported the similar sex and site predilection for pyogenic granuloma, peripheral giant cell granuloma and POF and suggested that these lesions could simply be varied histological responses to irritation.¹

The lesion presented as a localised overgrowth on the gingiva. These growths are commonly considered as reactive rather than neoplastic in nature.³ Previous studies showed that the average size of POF varied from 0.5 to 1.2 cm. Only few cases have been reported with a size of more than 2 cm.⁵ POF typically crops up in patients in the second or third decades⁶ and shows female predilection.⁴

The aetiopathogenesis of POF is uncertain; origin from cells of periodontal ligament was suggested. The reasons for considering its origin from periodontal ligament include⁶

1. Exclusive occurrence of POF in the gingiva.
2. The proximity of the gingiva to the periodontal ligament.
3. The presence of oxytalin fibres within mineralised matrix of some lesions.

Initiation of formation of bone or dystrophic calcification occurs with chronic irritation of the periosteal and the periodontal membrane causes metaplasia of the connective tissue. Hence a histopathological evaluation of biopsy specimens required for the confirmatory diagnosis of POF.⁷

Almost two-third of all cases occur in females, with a predilection for the anterior maxilla. Hormonal influences may play a role, given the higher incidence of POF among females, increasing occurrence in the 2nd decade and declining incidence after the 3rd decade.² Whites (71%) are more frequently affected than blacks (36%). The size of the POF ranges from 0.4 to 4.0 cm.⁸

Histologically, when bone and cementum-like tissues are observed, the lesions have been referred to as cemento ossifying fibroma.¹ The term “cemento ossifying” has been referred to

as outdated and scientifically inaccurate.⁹ Moreover, on H and E staining it is difficult to distinguish histologically between cementum and bone. Mineralized products in the form of trabeculae of woven and/or lamellar bone, cementum like material and dystrophic calcification are noticed.

Radiographic features of POF may vary. Radiopaque foci of calcifications have been reported to be scattered in the central area of the lesion, but not all lesions demonstrate radiographic calcifications.⁷ Underlying bone involvement is usually not visible on a radiograph. In rare instances, superficial erosion of bone is noted.⁷

A confirmatory diagnosis of POF is made by histopathologic evaluation of biopsy specimens. The following features are usually observed during the microscopic examination: (1) Intact or ulcerated stratified squamous surface epithelium; (2) benign fibrous connective tissue with varying numbers of fibroblasts; (3) sparse to profuse endothelial proliferation; (4) mineralized material consisting of mature, lamellar or woven osteoid, cementum-like material or dystrophic calcifications; and (5) acute or chronic inflammatory cells in lesions.^{7,10} Moreover, histopathologically, lamellar or woven osteoid pattern predominates; hence, the term “POF” is considered more appropriate.

Different treatment modalities include surgical excision by scalpel, laser or radial/electrosurgery.¹¹ The carbon dioxide laser can effectively excise the lesion and has been shown to allow diagnostic microscopic evaluation with a minimal distortion of the biopsy sample.¹² The advantages of laser excision are minimal post-surgical pain and no need for suturing the biopsy site. This precise tissue destruction can also result in partial or incomplete removal of the base of the pathologic lesion, which can lead to recurrence.¹³ Thus, surgical excision including the involved periodontal ligament and periosteum is the preferred treatment, which was performed in this case.

CONCLUSION

POF is a benign, slowly progressive lesion, with limited growth. It is one of the commonest solitary swelling in the oral cavity and is many times clinically diagnosed as pyogenic granuloma. Radiological and histopathological examination is required for confirmation of

diagnosis. Complete surgical excision down to the periosteum is the preferred treatment and as the recurrence rate is high (8-20%), close post-operative follow-up is required.

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Conflicts of interest

There are no conflicts of interests

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