CASE REPORT

Peripheral ossifying fibroma

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SUMMARY

Peripheral ossifying fibroma is a gingival growth, usually arising from interdental papilla and occurring frequently in the anterior maxilla. It represents upto 2% of all lesions that are biopsied. Other terms used to describe this lesion include peripheral ossifying fibroma, peripheral cementifying fibroma and calcified or ossified fibrous epulis. Paediatric patients with such a lesion have special management considerations as it requires early recognition and treatment. It requires proper treatment protocol with close postoperative follow-up. This case report presents a 12-year-old boy with an unusually large lesion in relation to the palatal aspect of the maxillary anterior teeth and its management.

BACKGROUND

Peripheral ossifying fibroma (POF) is a reactive 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 gingiva with a sessile or pedunculated base, usually originating from an interdental papilla.^{1 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

CASE PRESENTATION

A 12-year-old boy with swollen gums in his upper front teeth region was referred to the department of paediatric dentistry. The patient had noticed the swelling 1 month previously and observed that at present increased in size. The patient appeared apparently healthy with no significant medical history. Intraoral examination revealed an oval-shaped gingival mass in relation to the palatal aspect of maxillary incisors, which was interfering his bite, and the patient felt uncomfortable. The swelling was well-circumscribed, sessile, erythematous, firm on palpation and measured

Figure 1 Palatal view of the lesion.

approximately 2×2 cm in dimensions. The lesion was asymptomatic, and showed no clinical evidence of ulceration (figure 1). The overjet/overbite was observed under normal range. No significant radiological signs of involvement of the alveolar ridge were observed.

INVESTIGATIONS

1. Intraoral periapical radiograph was taken to over-rule any bony erosion concerned in the lesion, the lamina dura was intact in relation to 11 and 21 (figure 2).
2. Under histopathological evaluation, low magnification revealed proliferating epithelium overlying the fibrocellular connective tissue stroma with mineralisation (figure 3).

Figure 2 Intraoral periapical radiograph.

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Figure 3 Histopathological view under low magnification.

Higher magnification showed a para-keratinised stratified squamous type epithelium with an area of ulceration. Connective tissue stroma consisted of plump to spindle-shaped fibroblasts interspersed with chronic inflammatory cells with fibrosis and proliferating endothelial lined capillaries. Trabeculae of bone and globules of calcifications suggesting mineralisation were also seen within the connective tissue (figure 4).

DIFFERENTIAL DIAGNOSIS

The differential diagnosis included fibrous hyperplasia, pyogenic granuloma and peripheral giant cell granuloma and peripheral odontogenic fibroma.

TREATMENT

Under local anaesthesia, the lesion was completely excised down to the bone to clear the cells of origin and the adjacent teeth

Figure 4 Histopathological view under high magnification.

Figure 5 Postoperative photograph of the patient.

were also cleaned to avoid any source of irritation for recurrence of the lesion and the biopsy specimen was submitted for histological analysis.

OUTCOME AND FOLLOW-UP

The patient was followed up for a period of 6 months post-operatively. No signs of recurrence of the lesion were observed (figure 5).

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.⁴

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

Limited literature is available on the distribution of POF in children and adolescents. A study of 233 localised reactive hyperplastic lesions (LRHLs) in an Israeli paediatric population revealed that the distribution of POF was about 33% among all LRHLs, showed no sex predilection and more commonly occurred in the maxilla.⁷

The important difference between POF, COF, POdF and COdF:⁸

The aetiopathogenesis of POF is uncertain; origin from cells of periodontal ligament was suggested. The reasons for considering its origin from periodontal ligament include:⁹

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.¹⁰

Table 1 The important differences between POF, POdF, COF, COdF⁸

POF	POdF	COF	COdF
Classified under benign connective tissue lesions and may arise due to inflammation (Reactive)	Classified under odontogenic tumours of ectomesenchyme with or without included epithelium (Neoplasm)	Classified under fibro-osseous lesions and represents an osteogenic tumour (Neoplasm)	Classified under odontogenic tumours of ectomesenchyme with or without included epithelium (Neoplasm)
Common lesion occurring only on gingiva	Rare lesion of gingiva.	Common lesion in long bones but rare in skull and jaw bones	Very rare lesion occurring in jaw bones
It does not represent a soft tissue (extraosseous) counterpart of COF	It is a soft tissue (extraosseous) counterpart of COdF	Present centrally (intraosseously)—a distinct lesion from POF	Present centrally (intraosseously)—related to POdF
No further types or subclassifications	Histologically same as WHO type of COdF in gingiva	It is of two types: Psammomatoid. Juvenile type	It is of two type: 1. Simple type (with no mineralisation) 2. WHO type (with bone/cementum)

POF, peripheral ossifying fibroma; COF, counterpart of ossifying fibroma; POdF, peripheral odontogenic fibroma; COdF, central odontogenic fibroma.

Learning points

- The peripheral ossifying fibroma represents a localised reactive lesion of connective tissue. It has a predilection for occurring in anterior maxilla of young women.
- The standard treatment protocol involves excisional biopsy followed by histopathological evaluation.
- Routine postoperative follow-up is essential in most cases because of the recurring tendency of the lesion.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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