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Peripheral ossifying fibroma of maxilla in a female child - A case report

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Abstract

Peripheral ossifying fibroma is a benign, and slowly progressing growth which occurs on the gingiva in response to trauma or irritation. It is a reactive lesion of connective tissue and is not the soft tissue counterpart of central ossifying fibroma. The present article describes a case report of peripheral ossifying fibroma in a 10-year-old female child, its radiographic and histopathologic features along with its satisfactory clinical management. The accepted treatment includes surgical excision followed by histopathologic evaluation.

Keywords: Ossifying fibroma, Peripheral ossifying fibroma, Reactive gingival enlargement, Fibro-osseous lesion.

Introduction

Reactive gingival enlargements are frequently encountered in the oral cavity of children in daily clinical practice. Reactive lesions like pyogenic granuloma, peripheral giant cell granuloma, irritational/ traumatic fibroma and peripheral ossifying fibroma are usually nonaggressive in nature [(1)].

Ossifying fibroma is a part of benign fibro-osseous lesions of the jaw that are characterized by replacement of normal bone by fibrous tissue containing a newly formed mineralized product.

Peripheral ossifying fibroma is an infrequently occurring focal, reactive, non-neoplastic tumour-like growth of the soft tissue that primarily arises from the interdental papilla [(2)].

It is widely accepted that peripheral ossifying fibroma originates from the multi potent mesenchymal cells of the periodontal ligament which are able to form cementum, bone and fibrous tissue and it usually occurs as result of reactive response to trauma or local irritants,

such as subgingival plaque, calculus, dental appliances, poor-quality dental restorations etc. [3]. Clinically, peripheral ossifying fibroma may be sessile or pedunculated, ulcerated and erythematous or the color varying from pale pink to cherry with smooth surface [4]. Most of them are <2 cm in size, but sometimes larger ones can occur. Moreover, the lesions have female predilection and its recurrence rate is considered as high [3].

Even though peripheral ossifying fibroma can occur in any age group, it has a peak incidence between the second and third decades of life [3].

The present article highlights a case report of peripheral ossifying fibroma of maxilla in a 10-year-old female child, its diagnosis and satisfactory clinical management.

Case report

A 10-year-old female child reported to the Department of Pediatric and Preventive Dentistry with a chief complaint of a painless growth in the front region of the upper jaw since 2 months. Her past medical and family histories were non-contributory. The swelling had been first noticed two months back which gradually increased to the present size.

Intraoral examination revealed a well circumscribed, sessile swelling of size approximately 16x14mm, pale pink in color located on gingiva in relation to 21extending to the cervical one third of 21 (Figure1). The lesion was asymptomatic, nonulcerated, bony hard in consistency with well-defined borders and overlying mucosa appeared normal. 21 was noted to be pushed palatally, slightly by the lesion. There was no palpable cervical or submandibular lymph nodes.

Intra oral periapical radiographic examination showed no significant changes (Figure 2).

Axial and coronal CECT sections of head and neck showed well defined lesion with predominant bone density areas with few soft tissue areas within, arising from the anterior part of alveolar process of left upper incisor - suggestive of a bone forming neoplasm arising from maxilla (Figure 3).

After obtaining written consent from patient's parent, an incisional biopsy of the growth was performed under local anaesthesia and the specimen was sent for histopathological examination. The wound was closed with 3-0 vicryl suture (Figure 4).

The histopathologic report revealed numerous bony trabeculae which is surrounded by proliferating osteoblasts. Proliferating fibroblasts are also seen. This tissue is separated from superficial hyperplastic Para keratinised epithelium by a band of collagenous connective tissue wall. Deeper connective tissue showed numerous muscle bundles (Figure 5).

Based on the above histopathologic features a diagnosis of ossifying fibroma was made.

Then excision of the mass was planned under local anaesthesia. After achieving adequate aesthesia, incision was given directly over the borders of the growth and the lesion was excised along with the overlying mucosa and was taken out in toto and sent for histopathologic examination and the surgical site was covered with periodontal pack (coepack) (Figure 6).

The healing was uneventful on subsequent postoperative follow up (Figure 7).

The histopathologic report was consistent with that of incisional biopsy. No cellular atypia or increased mitosis was seen.

Based on the histopathologic features, correlating it with the clinical and radiographic findings, a final diagnosis of peripheral ossifying fibroma was made.

Discussion

Fibromas of the gingiva mainly originate from the connective tissue or the periodontal ligament. Ossifying

fibroma is a benign neoplasm mainly seen in the craniofacial bones, well demarcated from the adjacent bone and histologically it is composed of proliferating fibroblasts along with interspersed bone or calcified masses

Ossifying fibromas can be of two types

central and peripheral. The nidus of origin for the central type is in the endosteum or the periodontal ligament adjacent to the apex of the root which causes the expansion of the medullary space over a period of time and leads to associated extra oral swelling whereas the peripheral type is considered to arise in relation to the soft tissues in the tooth-bearing areas of the jaws [5].

The precise etiology of peripheral ossifying fibroma is unknown. Various predisposing factors that are considered to be the causative agents for the development of peripheral ossifying fibroma include trauma to gingiva, plaque accumulation, calculus, masticatory forces, ill- fitting appliances, mutilated teeth, poor quality or broken-down restorations and ill-fitting crowns [6].

Likewise, the pathogenesis of peripheral ossifying fibroma is also not clear. It has been suggested that peripheral ossifying fibroma arises from the cells of periodontal ligament as it usually originates in interdental papilla, its proximity to the gingiva and the periodontal ligament along with the presence of oxytalan fibres within the mineralized matrix of some lesions. Peripheral ossifying fibroma may develop due to secondary fibrosis of longstanding pyogenic granuloma to which it resembles clinically and histopathologic ally. It has been postulated that peripheral ossifying fibroma may arise following chronic irritation of the periosteal and periodontal membrane which causes metaplasia of the connective tissue and formation of bone or dystrophic calcified masses. Hormonal influences especially estrogenic and progesterone also play an important role in pathogenesis, as it has female predilection particularly in the second decade of life. Rarely it occurs as multicentric, which denotes the role of genetics in the pathogenesis of peripheral ossifying fibroma [7].

Incidence of peripheral ossifying fibroma is in the range of 9–10%. Females are affected more than males and it is more common in the first and second decades of life. Anterior maxilla (about 60% of cases) is the most common location for this lesion with 55–60% presenting in the incisor-cuspid region.

In the present case also, it was reported in the maxillary anterior region of a female child. Clinically, the peripheral ossifying fibroma presented as an exophytic, smooth-surfaced, pink or red nodular mass of size ranges from 0.2-3.0 cm to 9cm in diameter and sit usually appears as sessile or on occasion on a pedicle [7].

The radiographic features of peripheral ossifying fibroma may range from no change to destructive changes depending on the duration of the lesion. MacDonald-Jankowski described three stages in the radiographic appearance.

Initially the lesion appears as radiolucent (osteolytic image), As the stroma mineralizes it transforms into a mixed lesion. Eventually, the individual radiopacities coalesce to form sclerotic or radiopaque mature lesion [8]. Radiographically the present case was a mixed lesion.

Histopathology provides the confirmatory diagnosis with the identification of fibrous connective tissue and the focal presence of bone or other calcifications as was seen in the present case.

Three kinds of mineralized tissues can be seen in this lesion

1. Woven or lamellar bone sometimes surrounded by osteoid, or in trabecular form;

2. Cementum-like material that appears as spherical bodies resembling cementum or large acellular round-to-oval eosinophilic bodies;

3. Dystrophic calcifications that range from small clusters of minute basophilic granules or tiny globules to large, solid irregular masses [9,10].

The rate of recurrence has been reported to vary from 8.9% to 20%. To reduce recurrence, it is important to remove the lesion completely along with the subjacent periosteum and periodontal ligament.

Thorough root scaling of adjacent teeth and removal of all sources of irritation should be done. Tooth extraction is is usually not needed [7]. The present case followed up to 1 year.

Conclusion

Peripheral ossifying fibroma is one of the inflammatory reactive hyperplasia of gingiva. It occurs frequently in anterior part of jaws of young females, exclusively on gingiva. The accepted treatment includes surgical excision followed by histopathologic evaluation and follow up.

References

1. Buduneli E, Buduneli N, Unal T (2001) Long-term follow-up of peripheral ossifying fibroma: report of three cases. Periodontal Clin Investing 23: 11-14.

2. Neville BW, Damm DD, Allen CM, Bouquet JE. Bone pathology. In, Oral and Maxillofacial Pathology. 3rd ed. Philadelphia: Saunders;2009. p. 646-8.

3. Buchner A, Hansen LS. The histomorphology spectrum of peripheral ossifying fibroma. Oral Surg Oral Med Oral Pathol 1987; 63:452-61.

4. Bodner L, Dayan D. Growth potential of peripheral ossifying fibroma. J Clin Periodontal 1987: 14: 551-554.

5. Keluskar V, Byakodi R, Shah N (2008) Peripheral ossifying fibroma. J Indian Acad Oral Med Radiol 20: 54-56.

6. Gardner DG (1982) The peripheral odontogenic fibroma: an attempt at clarification. Oral Surg Oral Med Oral Pathol 54: 40-48.

7. Chand Wani M, Fernandes G. Peripheral ossifying fibroma: review and case report. Biomed Res Clin Pract. 2018;3(3):1-4.

8. MacDonald-Jankowski DS. Cemento-ossifying fibromas in the jaws of Hong Kong Chinese. Dentomaxillofac Radiol 1998; 27:298-304.

9. Cuisia ZE, Brannon RB (2001) Peripheral ossifying fibroma- a clinical evaluation of 134 Pediatric cases. Pediatr Dent 23: 245-248.

10. Poon CK, Kwan PC, Chao SY (1995) Giant peripheral ossifying fibroma of the maxilla:
report of a case. J Oral Maxillofacial Surgy 53: 695-698.

Legend Figures

Figure1: Intra oral view of the growth.

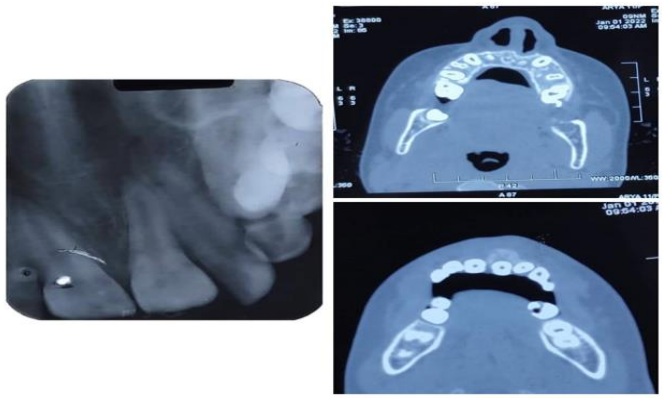

Figure 2: Intra oral periapical radiograph without any significant changes and CECT scan showing well

defined lesion with predominant bone density areas with few soft tissue areas within, arising from the anterior part of alveolar process of left upper incisor.

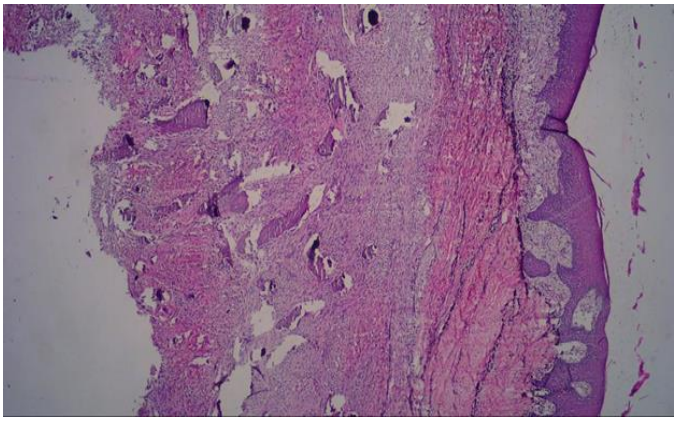

Figure 3: Histopathologic view of the growth

Figure 4: Surgical excision of the growth followed by covering of the surgical site with periodontal pack.

Figure 5: Follow up after 7 days and 1 month.