Peripheral Ossifying Fibroma: A case report

Soumya Purkait*, Prasanta Bandyopadhyay¹, Bakul Mallick¹, Indrasri Das¹, Dipayan Das²

¹Dept. of Periodontics, Dr. R. Ahmed Dental College & Hospital, Kolkata, India
²Dept. of Pathology, Medical College & Hospital, Kolkata, India

Keywords: Peripheral ossifying fibroma, gingival overgrowth

ABSTRACT

Peripheral ossifying fibroma (POF) is a reactive lesion of the gingival tissue that predominantly affects women. It originates from the cells of the periodontal ligament. The definitive diagnosis is established by histological examination. In this article, we have presented a case report with the histopathological evaluation and management.

*Corresponding author:
Dr. Soumya Purkait, 6A, Temple Lane, Dhakuria, Kolkata-700031, West Bengal, India
Phone : +91 09038608022
E-mail: soumyapurkaitpublication@gmail.com
**Introduction**

The peripheral ossifying fibroma is one of the triad of lesions that is present as gingival mass usually emerging from interdental gingiva and seemingly from PDL. The other two are pyogenic granuloma and peripheral giant cell granuloma. It is a relatively common gingival overgrowth that is considered to be reactive rather than neoplastic in nature. They are exophytic, pedunculated or sessile, nodular masses, and mostly affecting the gingiva. The pathogenesis of this lesion is uncertain.

Some investigators believe that the lesion is nevertheless odontogenic in origin, being derived from the periodontal ligament, especially since it only occurs in the gingiva and may contain oxytalan fibers within the mineralized matrix of some lesions.

The lesion is reactive in nature and is not the extrasosseous counterpart of a central ossifying fibroma (COF) of the maxilla and mandible. It is more common in children and young adults, although may occur at any age with a female predilection (2:1 to 3:2). It may be sessile or pedunculated and surface may be intact or ulcerated. It most commonly appears as broad based / pedunculated mass, usually in the anterior quadrant of either arches, emerging from PDL space, mostly seen in young adults. It is mostly fibrotic in nature and is not as red as pyogenic granuloma. In most of the cases there is no radiographic evidence of underlying bone involvement.

**Case Report**

A 40 year old female patient reported to the Dept. Of Periodontics, Dr. R. Ahmed Dental College and Hospital, with the chief complaint of pedunculated gingival enlargement in respect to #32 & #33 for last 4 months.

On intraoral examination, a pedunculated growth of 9mm × 10mm dimension with pale pink colour, smooth, non-haemorrhagic and non-lobulated surface, non-tender and firm in consistency was found in relation to #32 & #33, which were vital (Fig. 1).

Radiologically no bone resorption was evident. The patient had non-contributory medical history. There was no h/o deleterious oral habits. Oral hygiene was poor. Differential diagnosis includes as Pyogenic Granuloma, Peripheral Giant Cell Granuloma (PGCG) and Peripheral Ossifying Fibroma (POF).

**Surgical procedure:** At first, PHASE -I periodontal therapy was done thoroughly. Intra-oral irrigation is done with Chlorhexidine gluconate 0.2% and the mass is surgically excised under local anaesthesia (Fig 02) and sent for H/P evaluation. Full thickness muco-periosteal flap is elevated and proper curettage is done. She underwent an uneventful recovery (Fig 03). The patient was on regular follow up for the next 6 months and no recurrence of the lesion is found.

---

**Fig. 01:** shows a 9×10 mm pedunculated growth

**Fig. 02:** shows the excised gingival

**Fig. 03:** shows 1 week post-op photograph with uneventful healing
H/P EVALUATION:

Section stained with Haematoxylin & Eosine (H&E) revealed the presence of stratified squamous epithelium backed by fibro-vascular connective tissue (FIG 04 & 05). In the stroma, an area of marked proliferation of fibroblasts with formation of a bony trabeculae (FIG 06) is found. Beside this, a marked chronic inflammatory cell infiltration in the connective tissue was also noted. Hence the overall H/P evaluation of the lesion is suggestive of Peripheral Ossifying Fibroma (POF).

Discussion

In 1982, Gardner coined the term peripheral ossifying fibroma for a lesion that is reactive in nature and is not the extra osseous counterpart of a central ossifying fibroma (COF) of the maxilla and mandible. The term fibroma means tumour of fibrous connective tissue (Latin fibra means ‘fiber’ and Greek oma means ‘tumour’). But POF is considered not as a true neoplasm. Apparently, the name POF represents a misnomer. Considerable confusion exists over the nomenclature of this lesion. In the past, the terms peripheral odontogenic fibroma & peripheral ossifying fibroma often were used synonymously, but former is now considered as a separate and distinct entity.

The use of a variety of terminologies for POF indicates a great amount of confusion regarding the lesion and its pathogenesis. Ossifying fibroid epulis, calcifying fibroma, peripheral fibroma with calcification, peripheral fibroma with cementogenesis, peripheral cemento-ossifying fibroma, peripheral cementifying fibroma, ossifying fibro-epithelial polyp, peripheral fibroma with osteogenesis, calcifying or ossifying fibrous epulis and calcifying fibroblastic granuloma are all terms that have been used to refer to peripheral ossifying fibroma.

There are two types of ossifying fibromas: the central type and the peripheral type. The central type arises from the endosteum or the periodontal ligament adjacent to the root apex and causes the expansion of the medullary cavity. The peripheral type occurs solely on the soft tissues covering the tooth-bearing areas of the jaws. Central ossifying fibroma was found to exhibit increased proliferative activity compared to peripheral ossifying fibroma. The radiographic findings showed normal underlying bone structure in 26 cases out of 27 and one lesion revealed cupping out of alveolar bone.

Here, in the H/P picture, there was presence of normal stratified squamous gingival epithelium (FIG 07 & 09), and hence it can be differentiated from central ossifying fibroma (COF), which will lack the presence of epithelium. The H/P slide examination also revealed the presence of bony trabeculae with a marked osteoblastic rimming (FIG 08). This feature differentiates it from fibrous dysplasia histologically. Dispersed dystrophic calcifications represented by clusters of basophilic granules are seen. The connective tissue was more collagenized and the inflammatory infiltrate was diminished.

An origin in the periodontal ligament has been suggested for considering the periodontal ligament as the origin of POF due to its exclusive occurrence in the gingiva.
(interdental papilla), and the presence of oxytalan fibers within the mineralized matrix of some lesions. A possible hormonal influence has also been considered mainly because POFs are rare in prepubertal patients. However, a few study failed to demonstrate the expression of oestrogen and progesterone receptors in proliferating cellular components. The rare manifestation of multicentric occurrence suggests a possible role of genetics in the pathogenesis of the disease.

The treatment of choice is complete surgical excision with the removal of the irritating factors. The mass should be excised down to periosteum as it shows a tendency of recurrence if any part of the lesion is allowed to remain. In addition, adjacent teeth should be thoroughly scaled to eliminate all possible irritants. Periodontal plastic surgery may be necessary to repair the gingival defect in an aesthetic manner. Although excision is usually curative, a recurrence rate of 8% - 16% has been reported.

**Conclusion**
This report highlights the common clinical feature and H/P picture of POF along with the management. Peripheral ossifying fibroma has a high rate of recurrence, making postoperative follow-up mandatory. It is also necessary to use consistent and specific nomenclature in the literature to avoid confusion and the loss of important data.

**Acknowledgements**
We acknowledge all the staffs of Deptt. Of Periodontics of Dr. R. Ahmed dental college & hospital for their sincere supports.

**Funding**
None

**Competing Interests**
None declared

**References**
2. Giovanni Mergoni, Marco Meleti, Simone Magnolo, Illaria Giovannacci, Luigi Corcione, Paolo Vescovi; Peripheral ossifying fibroma: A clinicopathologic study of 27 cases and review of the literature with emphasis on histomorphologic features ; Journal of Indian Society of Periodontology- vol 19, Issue 1, Jan-Feb 2015
3. Shafer’s Textbook of Oral Pathology/ 7th edition/ page-133