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Case Report

Peripheral cementifying fibroma of the oral cavity: A case report

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ABSTRACT

Peripheral cementifying fibroma is a relatively uncommon, solitary, nonneoplastic gingival growth. They are usually painless and are often ignored by the patient until they become symptomatic or are diagnosed by the dentist. Due to long-standing, undiagnosed lesions, ulcerations were common. A recurrence rate of 5 – 20% was seen after excision. It depends on the diagnosis, the efficacy of the surgical removal, and the reduction of local irritating factors associated with their aetiology. Histologic diagnoses for the lesions are recommended clinically; they may be similar to various lesions, but the recurrence rates may differ. This report discusses a peripheral certifying fibroma affecting the mandibular posterior region; the lesion was excised surgically, followed by appropriate treatment.

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1. Introduction

Peripheral cementifying fibroma is an expected growth on the gingiva that is considered reactive. It is also known as peripheral odontogenic fibroma, calcifying or ossifying fibroid epulis. It is also considered to be a solitary growth on the gingiva that is thought to arise from the periodontal ligament at the region of interdental papilla.¹ Peripheral ossifying fibroma was coined by Eversole and Ravin in the year 1972. There are two types of ossifying fibroma: the central type, which arises from the endosteum or periodontal ligament adjacent to the root, and the peripheral type, which occurs on the soft tissue covering tooth-bearing areas of the jaw. It accounts for 9.6% of all gingival lesions.^{2,3} Some peripheral ossifying fibroma is believed to develop from pyogenic granuloma, which undergoes fibrous maturation and calcification. Local irritating factors like calculus, ill-fitting denture appliances and faulty restoration are known

to precipitate the lesions. The calcification occurs from periosteal cells or periodontal ligament. It usually appears as a nodular mass that is either pedunculated or sessile. The colour of the lesion usually varies from pink to red, and the overlying surface is sometimes ulcerated. The predilection for the site of occurrence is the maxillary arch (60%) and the incisor-cuspid region (50%), but it is also seen in the mandibular area. Reviewing the literature shows that it affects both genders with a slighter higher predilection for females. The peak incidence of occurrence is around the second to third decade of life.⁴

2. Case Report

A 40-year-old female patient reports to the outpatient department with a chief complaint of growth in the lower right back region of the jaw in the last 8-10 years. Pain has been present in the same area for the previous few months. The patient was asymptomatic 8-10 years back when she noticed a slight growth in the mandibular right

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back region of the mouth. The size gradually increased till it reached its present height. She also experienced pain, which was spontaneous, intermittent, dull and aggravated while chewing for the last few months.

2.1. Extra-oral-examination

The face was bilaterally symmetrical, with no palpable lymph nodes and bilateral synchronous TMJ.

2.2. Intraoral examination

They were solitary sessile oval swelling present on the mandibular left posterior region. On palpation, all findings were confirmed. The lesion was firm and tender on palpation, with no discharge or induration. Mobility was seen in teeth 44,45,46. The teeth were non-tender on percussion. A provisional diagnosis of Peripheral ossifying fibroma was given with a differential diagnosis of irritational fibroma, pyogenic granuloma, and peripheral giant cell granuloma. IOPA revealed erosion of the alveolar crest interproximal concerning 44, 45, 46. The mandibular occlusal view did not show any significant findings. A complete hemogram was advised, which showed all the blood counts within normal limits.



Fig. 1:

After acquiring the patient's informed consent, an excisional biopsy was performed on the buccal and lingual sides. The healing was uneventful, and the excised tissue was sent for histopathological evaluation.

2.3. Excisional biopsy

Received a soft tissue specimen, 2.5 cm x 1.5 cm in dimension, roughly oval, pinkish white, and firm in consistency. The outer surface is convex, smooth, and pinkish-white with irregular margins. The inner shell is concave with an uneven lobulated surface. The soft tissue bit is cut longitudinally into two halves, and both bits are sent for processing.



Fig. 2:



Fig. 3:

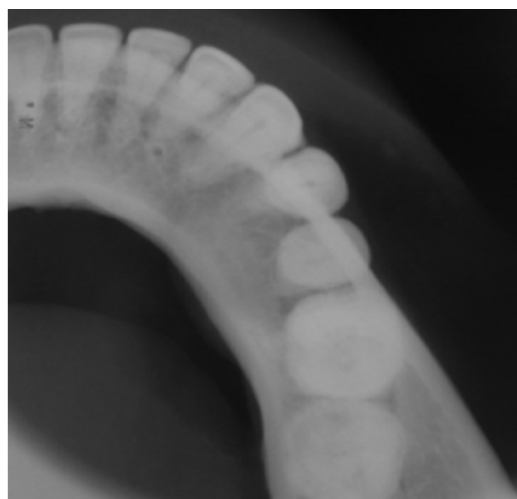
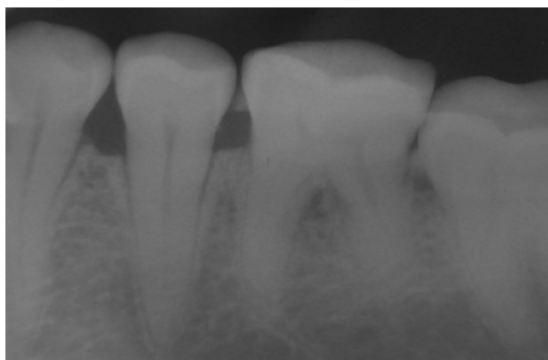
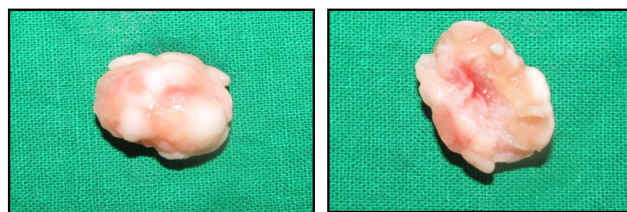


Fig. 4:

**Fig. 5:****Fig. 6:**

2.3.1. Healing after removal of the lesion

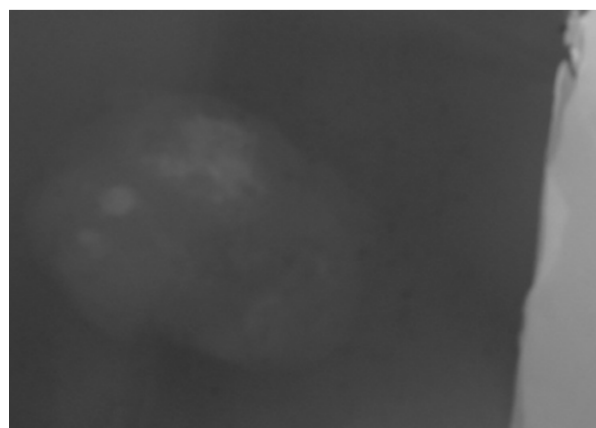
**Fig. 7:**

The lesion was sent for radiological examination. Radiopaque islands seen within the excised tissue with lead foil placed for comparison.

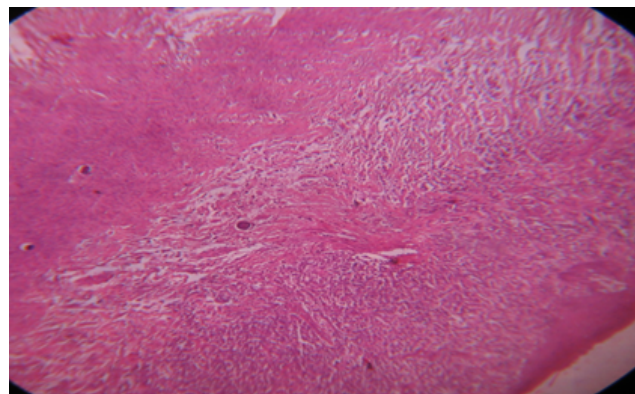
Radiographic differential diagnosis for peripheral tumours with calcification was peripheral cemento-ossifying fibroma and peripheral odontogenic fibroma.

2.3.2. Histopathological examination

H&E-stained section under low power shows keratinised stratified squamous epithelium, which is atrophic at places. The juxta epithelial connective tissue comprises loosely arranged fibro cellular connective tissue stroma. Few

**Fig. 8:**

basophilic droplet-like structures are seen in connective tissue stroma. The deeper connective tissue stroma is densely arranged with highly cellular areas. Few eosinophilic and basophilic calcified masses are seen interspersed in connective tissue stroma.

**Fig. 9:**

High power view shows para keratinised stratified squamous epithelium, which is atrophic at places. The juxtaepithelial connective tissue stroma is loosely arranged and composed of dense chronic inflammatory cells that infiltrate predominantly plasma cells.

Droplets of basophilic calcified masses are seen in connective tissue stroma.

Few blood vessels, plump fibroblasts and proliferating endothelial cells are seen. Basophilic and eosinophilic calcified masses are caught in a highly cellular stroma.

Basophilic calcified masses of varying sizes surrounded by highly cellular stroma are noted.

2.4. Final diagnosis

Peripheral cementifying fibroma. Post-op follow-up for seven days.

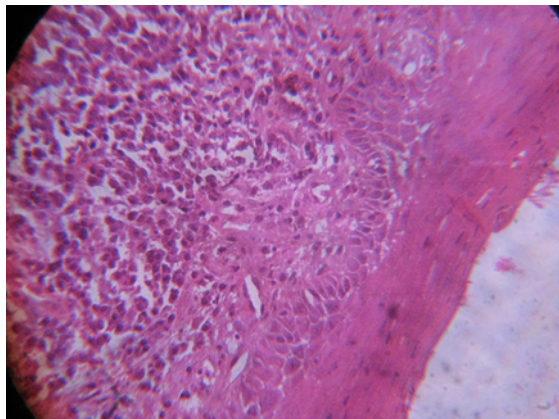


Fig. 10:

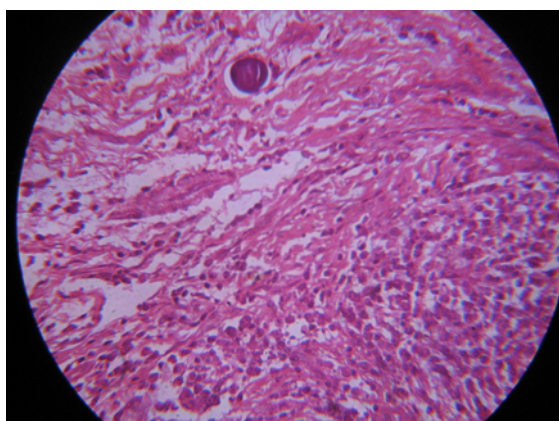


Fig. 11:

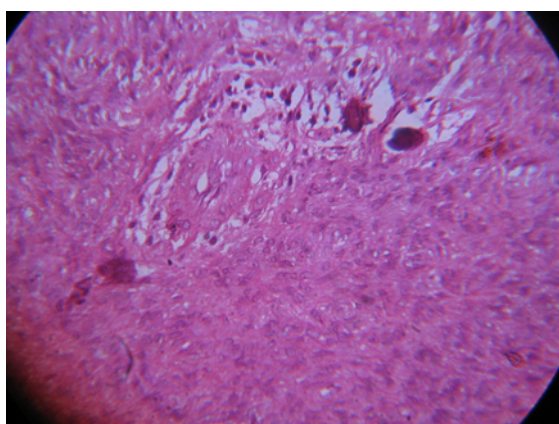


Fig. 12:

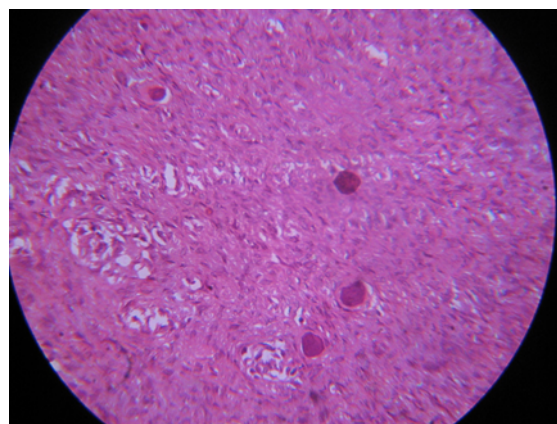


Fig. 13:

3. Discussion

Cement ossifying fibroma has been regarded as scientifically inaccurate⁵ as the histologic presentation of cemento ossifying fibroma is the same where there is no cementum, such as the femur, tibia and skull. Cemento ossifying fibroma is used for fibromas with round basophilic bone particles in the ossifying fibromas, randomly called cementicles. Peripheral ossifying fibroma, a reactive lesion, is a non-neoplastic lesion with an unknown aetiology. Kumar SK suggested a possible origin from the cells of the periodontal ligament.⁶ The reason for their hypothesis included the occurrence of POF in the gingiva (interdental papilla) and its proximity to the periodontal ligament with the presence of oxyalan fibres within the mineralised matrix of such lesions. It occurs exclusively on the gingiva, close to the periodontal ligament. Peripheral ossifying fibromas usually contain fibrous connective tissue endothelial proliferative tissue. The recurrence rate of POF is 7-45% and is considerably high for benign, reactive growth.⁷ Therefore, complete excision is the preferred management of POF. It is probably due to incomplete initial removal of the lesion, repeated injury, and persistent irritants, which leads to possible reoccurrence. Das and Azar 2009 reported the first interval time of reoccurrence to be 12 months. There is a slight female predisposition of POF, most commonly found in the maxillary anterior, i.e., inciso-cuspid area and in the second decade of life.⁸ Hormonal imbalance may influence the occurrence in females more, which declines with advancing age. (Kenney et al. 1989. The histomorphologic and biochemical difference between bone and cementum is none.

The presence of dysmorphic round basophilic bone particles within ossifying fibromas is called cementicles. These are not from cementum but instead represent a dysmorphic product of this tumor similar to the keratin pearls, which are a dysmorphic product of squamous cell carcinoma.⁵

3.1. Etiopathogenesis

Though the etiopathogenesis of PCF is uncertain, an origin from the periodontal ligament cells has been suggested. The reasons for the periodontal ligament origin of PCF include the exclusive occurrence of peripheral cementifying fibroma in the gingiva, the proximity of the gingiva to the periodontal ligament and the presence of oxytalan fibres within the mineralised matrix of some lesions.⁶ There is excessive proliferation of mature fibrous connective tissue in response to gingival injury, irritation, calculus or a foreign body. Chronic irritation causes metaplasia of the connective tissue and the resultant initiation of the formation of bone or dystrophic calcification. It has been suggested that the lesion may be caused by fibrosis of the granulation tissue.⁹

It is usually a slow-growing nodular mass that is either pedunculated or sessile with a smooth or ulcerated surface and red or pink. It has been reported to occur exclusively in the gingiva, accounting for 3.1% of all oral tumours and 9.1% of gingival lesions.¹⁰ Similarity in the clinical appearance of various lesions makes histopathological examination important. Radiographic changes are not seen except for occasional foci of radiopaque material that may be seen with overt mineralisation. Histologically, it reveals non-encapsulated masses of cellular connective tissue with randomly distributed calcifications. The mineralised product originates from periosteal cells or periodontal ligaments.¹¹ Farquhar et al. 2008 found the mineralised component of peripheral ossifying fibroma to vary from 23% to 75%.

4. Conclusion

A slowly growing soft tissue mass in the oral cavity of children or young adults present in the anterior region should raise the suspicion of a reactive lesion such as POF, fibroma or a Peripheral giant cell granuloma, which are usually associated with poor oral hygiene or periodontal disease. In most cases, no underlying bone involvement is seen on a radiograph. Treatment usually includes surgical excision; if left untreated, it may interfere with normal chewing. Hence, prompt treatment is necessary.

5. Source of Funding

None.

6. Conflict of Interest

None.

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