ijlpr 2020; doi 10.22376/ijpbs/lpr.2021.11.3.L38-42

International Journal of Life science and Pharma Research

Case Report

Periodontitis for Dental health

Peripheral Ossifying Fibroma: A Case Report

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Abstract: The gingiva is often considered as one of the most common sites of localized growths that are considered to be reactive rather than malignant in nature. Clinically, the majority of these lesions are difficult to identify, and therefore histopathology is useful in diagnosing these lesions as specific entities only on the basis of typical and consistent features. Focal gingival enlargements are quite frequent lesions in the oral cavity amounting to almost 3.1% of all oral tumors and 9.6% of gingival lesions. Peripheral ossifying fibroma (POF) is one of the reactive lesions that have typical histopathological features. Since the late 1940s, intraoral ossifying fibromas have been discussed in the literature. The term "Peripheral ossifying fibroma" is usually used to describe a fibroma of the gingiva which shows areas of calcification or ossification. They are usually classified as non-neoplastic enlargement of the gingiva. Many POFs are thought to develop initially as a pyogenic granuloma that undergoes fibrous maturation and subsequent calcification. However, many authors have suggested that rather than a transitional form of pyogenic granuloma or irritation fibroma, POF represents a separate clinical entity. Different lesions with clinical presentations similar to POF make it difficult to arrive at an appropriate diagnosis. Usually, the treatment of POF includes excision of the lesion surgically with minimal chances of recurrence. This paper describes a case report of a 32 year old female patient who reported growth on gingiva in the mandibular left anterior region of the mouth for three years.

Keywords: Peripheral ossifying fibroma, Peripheral cementifying fibroma, Pyogenic granuloma, Irritation fibroma, Ossifying fibroma

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Recieved On 10 February 2021
Revised On 24 April 2021
Accepted On 27 April 2021
Published On 06 May 2021

Funding This research did not receive any specific grant from any funding agencies in the public, commercial or not for profit sectors.

Citation Dr. Romita Dilip Gaikwad and Dr Farooque Khan , Peripheral Ossifying Fibroma: A Case Report.(2021).Int. J. Life Sci. Pharma Res.11(3), L38-42 http://dx.doi.org/10.22376/ijpbs/lpr.2021.11.3.L38-42

1. INTRODUCTION

Localized gingival growths being one of the most commonly encountered lesions in the oral cavity. They are usually considered to be reactive rather than malignant in nature.[1] Various lesion with clinical presentation overlapping makes it difficult at times to arrive at an appropriate diagnosis. Many types of localized reactive lesions are seen on the gingiva including focal fibrous hyperplasia, pyogenic granuloma, peripheral giant cell granuloma, and peripheral ossifying fibroma.[2,3,4] Peripheral ossifying fibroma (POF) is one of them. Considerable confusion has prevailed in the nomenclature of POF due to its variable histopathologic features. In 1982, Gardner coined the term Peripheral ossifying fibroma (POF).[5]Peripheral ossifying fibroma (POF) is a non-neoplastic enlargement of the gingiva primarily caused by local irritation and minor trauma. Ossifying fibromas of the oral cavity can be divided into Central type which arises from the endosteum or periodontal ligament and peripheral type which arises from the soft tissue. POF represents 9.6% of all gingival tumors and 3.1 .1% of the oral lesions which are biopsied. It can occur at any age, but more commonly presents in the second or third decade of life with a slight preponderance to occur more in females in a ratio of 1.22:1.[6] It is also stated that whites (71%) are more frequently affected than blacks (36%).[7] Synonyms of POF are peripheral cementifying fibroma, calcifying or ossifying fibroid epulis, and peripheral fibroma with calcification. The lesions of POF are usually less than 1.5-2 cm in diameter but have been known to grow to larger sizes. POF can cause resorption of the alveolar crest and separation of adjacent teeth with pathologic migration. The pathogenesis of this lesion is uncertain due to the clinical and histopathological similarities. Radiographically the features of POF tend to vary and are not very characteristic. Foci of calcifications have been reported to be scattered in the central area of the lesion, but not in all lesions. Underlying bone involvement is usually not visible on a radiograph but in rare instances, superficial erosion of bone can be seen.[8] There is uncertainty for diagnosing focal reactive overgrowths of the gingiva because of their nearly same clinical presentation. The typical appearance of POF is small gingival growth initially which can attain large sizes. Surgical excision is the treatment of choice for POF. A recent approach is the use of lasers for its removal, because of its advantage of less bleeding and minimal pain. Whatever may be the method of excision, histopathological examination for arriving at the final diagnosis should always be considered. Here, we report a rare case of POF affecting the mandibular left anterior region. Thus, interdisciplinary approach is required in the treatment of such cases so as to decrease its reappearance and to improve the standard of life, thus providing better functioning and esthetics. Here, we report a case of POF affecting the mandibular left anterior region.

1.1 *Case Report*

A female patient aged 32 years was referred to the Department of Periodontics. The patient had a chief complaint of painless growth on the gingiva in the mandibular left anterior region of the mouth for three years. It had progressed gradually to increase in size and attained the present size. Growth was associated with bleeding on brushing occasionally. She gave no history of any traumatic injury. Even there was no history of pain or pus drainage in the same region. Her medical and dental history was not contributory. Clinical examination of the oral cavity revealed a nodular mass of size 1.5 cm x 1.5 cm on the gingiva in relation to the left canine and first premolar. The lesion was reddish-pink in color, firm and erythematous having a smooth, non-ulcerated surface. The mass was sessile, dome-shaped and it appeared to be freely movable from the underlying bone (Figure 1).

Fig 1: Pre-operative intraoral photograph showing the lesion

Intraoral periapical radiograph of 33, 34 regions revealed mild horizontal bone loss without any root resorption or pathologic tooth migration. The bone around the outer limits of the lesion appeared normal with areas of cuffing were evident in the crestal region between 33 and 34 (Figure 2).

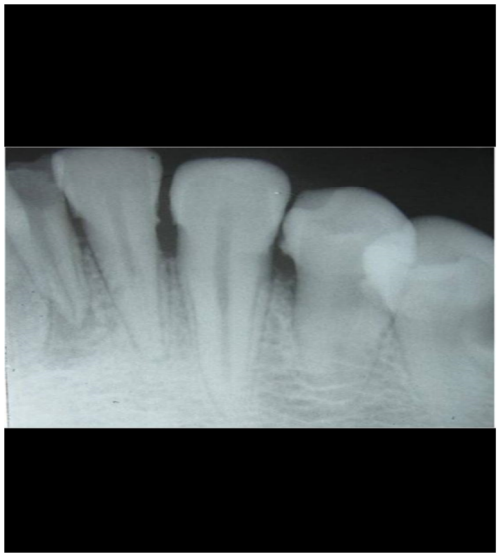

Fig 2: Intraoral periapical radiograph of 33, 34 regions revealed mild horizontal bone loss with 33, 34

Hemoglobin, total & differential white blood cell counts, bleeding as well as clotting times were within the normal limits. Aspiration of the lesion was not performed as it appeared to be solid. The patient was informed about the treatment procedure and after obtaining her consent, Phase-I therapy including scaling and root planning was performed. The patient was further motivated to maintain good oral hygiene. After 2 weeks of completion of phase I therapy, which consisted of oral hygiene instructions, motivation and scaling and root planning, the growth was excised. Under all aseptic precautions and conditions, excision of tissue has performed in the region of 33, 34 under local anesthetic containing adrenaline (Figure 3).

Fig 3: After surgical excision

After excision of tissue, hemostasis was achieved. The surgical site was covered with a periodontal dressing. Post-operative instructions were explained. Medications were prescribed. The excised lesion was submitted for histopathological examination. The patient was recalled after 1 week for re-evaluation. On histopathological investigation, parakeratinized stratified squamous epithelium underlined by highly cellular tissue with plump fibroblast arranged in interlacing fascicles was seen. Numerous bony trabeculae lined by osteoblasts containing osteocytes in lacunae were also noted. Osteoid rim was seen around a few bony trabeculae along with numerous blood vessels. The histopathological findings confirmed the lesion as POF (Fig 4).

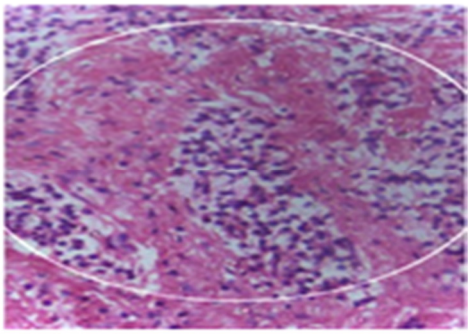

Fig 4: H & E stained section shows Para keratinized stratified squamous epithelium underlined by highly cellular tissue with plump fibroblast arranged in interlacing fascicles. Numerous bonytrabeculae lined by osteoblasts containing osteocytes in lacunae. Osteoid rim was seen around a few bony trabeculae along with numerous blood vessels. The histopathological findings confirmed the lesion as POF.

2. DISCUSSION

Fibromatous lesions are benign tumors that are composed of fibrous connective tissue. Menzel first described the lesion of ossifying fibroma in 1872, but the terminology of POF was given by Montgomery in 1927.[9]Though the etiopathogenesis of POF is uncertain, origin from cells of periodontal ligament has been suggested. The reasons for considering periodontal ligament origin include the excessive occurrence of POF within the gingival interdental papilla, the proximity of the gingiva to the periodontal ligament, the presence of oxytalan fibers within the mineralized matrix of some lesion and therefore the microcellular response in the periodontal ligament. In response to gingival injury, gingival irritation, subgingival calculus, or a foreign body in the gingival sulcus there is excessive proliferation of mature fibrous connective tissue. The resultant initiation of formation of bone or dystrophic calcification is because of chronic irritation of the periosteal and periodontal membrane which is because of metaplasia of the connective tissue.[1] Given the higher incidence of POF among females it is considered as hormonal influences may play a role in the etiology of POF, with more occurrence in the second decade and less incidence after the third decade.[10] Also, almost two-thirds of all cases occur in females similar to our case and the anterior maxilla is considered to be the most common site.[11] Histologically, mineralized products in the form of trabeculae of woven and/or lamellar bone, cementum-like material and dystrophic calcification are noticed. Radio graphically the features of POF 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.[12] In the present case, areas of cuffing were evident in coastal regions between 33 and 34 on radiographic examination and osteoid rimming was seen around few trabeculae. After histopathologic evaluation of biopsy specimens, a final diagnosis of POF is made. During the microscopic examination, the following features are usually observed: 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.[12,13] Lamellar or woven osteoid pattern predominates histopathologically; hence, the term "POF" is considered more appropriate. Treatment of POF includes various treatment like surgical excision by scalpel, laser, or radial/electrosurgery.[14] The carbon dioxide laser is effective for excising the lesion and with minimal distortion of the biopsy sample has been shown to allow diagnostic microscopic evaluation.[15] Laser excision is beneficial as post-surgical pain is minimal and there is no need for suturing the biopsy site. However, this precise tissue destruction can also lead to partial or incomplete removal of the base of the pathologic lesion and thus cause recurrence.[16] Therefore, surgical excision including the involved periodontal ligament and periosteum is the preferred treatment of choice,[11] which was performed in this case. Also, as the recurrence rate is high (8-20%), [3] post-operative follow-ups is required.[17]

3. CONCLUSION

Peripheral ossifying fibroma are the commonest gingival growths which are usually solitary. In our case, the growth was seen in a female patient as POF is having gender predilection for females. However, radiographic features were not characteristic. On histopathological examination, the findings were diagnostic for presence of POF. Thus, knowledge of POF by dental practitioners is important as it shares various clinic-pathological presentation. Any reactive lesion should be identified by considering the possible differential diagnosis in order to plan an accurate treatment plan for the patient.

4. AUTHORS CONTRIBUTION STATEMENT

Dr Romita Gaikwad conceptualized and gathered the data with regard to this work. Dr. Farooque Khan gave necessary inputs towards the designing of the manuscript and also drafted the manuscript. All authors discussed the reported case with respect to diagnosis, treatment plan, prognosis and contributed to the final manuscript.

5. CONFLICT OF INTEREST

Conflict of interest declared none.

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