Journal of Orofacial and Health Sciences 2024;11(2):86–88

Content available at: https://www.ipinnovative.com/open-access-journals

DJ COLLEGE OF DENTAL SCIENCES & RESEARCH

Journal of Orofacial and Health Sciences

Journal homepage: https://www.johs.in/

INNOVATIVE PUBLICATION

Case Report

Peripheral ossifying fibroma: A rare case report and review of literature

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ARTICLE INFO

Article history:
Received 15-10-2023
Accepted 22-11-2023
Available online 13-07-2024

Keywords:
Peripheral Ossifying Fibroma (POF)
Gingival Enlargement
Histopathological

ABSTRACT

This case report delves into the complexities of Peripheral Ossifying Fibroma (POF), a rare benign gingival enlargement in oral pathology. The exploration encompasses the clinical presentation, diagnostic methodologies, treatment modalities, and long-term management of POF. The presented case involves a 21-year-old female with a three-year history of gum swelling and loose teeth. Through clinical, radiographic, and histopathological examinations, POF was diagnosed, emphasizing the challenges in distinguishing it from similar conditions. The comprehensive review guides clinicians through the intricate landscape of POF, contributing to enhanced diagnostic accuracy and treatment outcomes. The synergy of clinical, radiological, and histopathological assessments is crucial in unraveling the mysteries of rare occurrences like POF, ensuring timely and appropriate patient care for optimal outcomes.

1. Introduction

Peripheral Ossifying Fibroma (POF) is a unique entity in oral pathology, representing a non-neoplastic and benign gingival enlargement that poses challenges in both diagnosis and treatment. This case report aims to explore the intricacies of POF, delving into its clinical presentation, diagnostic methodologies, treatment modalities, and the crucial aspects of long-term management.

The clinical manifestation of POF reveals distinctive characteristics—a slow-growing, painless, pedunculated mass typically emerging from the interdental papilla in the anterior maxilla. This review seeks to unravel the complexity surrounding POF, providing a comprehensive understanding of its diverse clinical manifestations. Going beyond surface observations, we embark on an exploration of diagnostic methodologies, recognizing the significance of radiographic examinations that unveil varying degrees of radiopacity within the lesion and potential bone loss adjacent to it.

Treatment strategies for POF are marked by a surgical approach, emphasizing complete excision of the lesion, including the underlying periosteum and periodontal ligament. Thorough curettage to eliminate local irritants is crucial, with tooth extraction rarely warranted. Despite these interventions, POF poses a challenge due to its propensity for recurrence, necessitating a vigilant, long-term management plan.

This comprehensive review aims to guide clinicians through the intricate landscape of POF, equipping them with the knowledge needed to navigate its complexities.

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https://doi.org/10.18231/j.johs.2024.019

By delving into the clinical, diagnostic, and therapeutic dimensions of POF, we aim to contribute to an enhanced understanding of this benign gingival enlargement, fostering improved diagnostic accuracy and treatment outcomes in the realm of oral pathology.

2. Case Report

A 21-year-old female presented with a chief complaint of gum swelling and loose teeth in the lower anterior jaw persisting for three years. The swelling, initially the size of a peanut, gradually increased over time. No pain was associated with the swelling, but the patient experienced discomfort during speech and eating. There was no relevant family or medical history, and no history of trauma, injury, or food impaction.

Upon intraoral examination, a well-defined pedunculated gingival growth between teeth 41, 42, and 31 was observed. It involved the marginal, attached, and interdental gingiva, measuring approximately 1.5 cm x 1 cm in diameter, extending from the mesial aspect of tooth 31 to 42. The color was pale pink with smooth surfaces and well-defined edges. The swelling was soft to firm in consistency and non-tender, with no bleeding on manipulation. Radiographic examination in the region of teeth 31, 41, and 42 revealed irregular radiopacity in the mesial aspect of tooth 31, accompanied by bone loss in teeth 31, 41, and 42.

Based on clinical, histopathological, and radiographic examinations, the diagnosis of POF was established. The patient returned for a follow-up examination 10 days postoperatively, and the surgical site showed uneventful healing.

3. Discussion

Ossifying fibroma, a benign neoplasm predominantly found in craniofacial bones, presents unique challenges in both diagnosis and treatment. Distinguished by well-demarcated lesions comprising proliferating fibroblasts interspersed with bone or calcified masses, ossifying fibromas manifest in two main types: central and peripheral.[1] Central ossifying fibromas, originating from the endosteum or the periodontal ligament near a tooth's root apex, result in medullary space expansion and extraoral swelling. In contrast, peripheral ossifying fibromas emerge within the soft tissues of tooth-bearing areas in the jaws.[2]

In the exploration of a rare occurrence of Peripheral Ossifying Fibroma (POF) presented in this case report, we have delved into the intricate interplay of clinical, histological, and radiological features. While clinically resembling the common pedunculated gingival enlargement, pyogenic granuloma, this case underscores the paramount importance of radiological and histopathological evaluations in reaching a definitive diagnosis of POF.

The clinical presentation of POF is characterized by a slow-growing, painless, and pedunculated mass situated in the anterior mandible, creating a challenge in distinguishing it from other gingival enlargements.[3] Notably, our patient, a 21-year-old female, exhibited gum swelling and loose teeth persisting for three years, prompting a comprehensive intraoral examination. The well-defined pedunculated gingival growth observed between teeth 41, 42, and 31 was initially the size of a peanut, gradually increasing in size over time. Although lacking associated pain, the patient experienced discomfort during speech and mastication, highlighting the need for a prompt and accurate diagnosis to initiate appropriate treatment.

Radiographic examination played a pivotal role in uncovering the underlying complexities of the case. Irregular radiopacity in the mesial aspect of tooth 31, accompanied by bone loss in adjacent teeth 31, 41, and 42, painted a more nuanced picture of the lesion. These radiological findings provided valuable insights into the extent of the pathology, emphasizing the importance of incorporating imaging techniques in the diagnostic process.

Histopathological examination, the cornerstone of confirming POF diagnosis, illuminated the microscopic intricacies of the lesion. The characteristic proliferation of fibroblasts interspersed with mature bone or calcified masses was evident, distinguishing POF from other gingival enlargements. This microscopic analysis served as a crucial guide in steering the diagnosis away from potential mimickers, such as pyogenic granuloma, toward the accurate identification of POF.

Addressing the challenge of diagnosing POF, which can mimic other oral cavity conditions, necessitates a multifaceted approach. Thorough clinical and radiographic examinations, complemented by histopathological findings, form the cornerstone of a prompt and accurate diagnosis.[4,5]

Successful management of POF entails not only surgical excision and curettage but also the maintenance of good oral hygiene. Long-term follow-up becomes imperative due to the elevated relapse rates associated with this condition.

Differential diagnoses that mimic POF include peripheral giant cell granuloma (PGCG), peripheral odontogenic fibroma, and pyogenic granuloma.[6,7]

Histological examination of biopsy specimens serves as the definitive diagnostic tool, with PGCG exhibiting multinuclear giant cells, peripheral odontogenic fibroma containing odontogenic epithelium and dysplastic dentin, and pyogenic granuloma displaying greater vascularity compared to POF.

The preferred treatment for Peripheral Ossifying Fibroma (POF) involves comprehensive excision, extending to the underlying periosteum and periodontal ligament.[8,9] Concurrent removal of local irritants through meticulous curettage is crucial to minimize the risk of relapse.[10]

Interestingly, tooth extraction adjacent to the lesion is rarely deemed necessary, highlighting a conservative approach. In cases left untreated, the lesion's potential for significant growth and subsequent bone destruction underscores the importance of timely intervention.[11,12]

Despite being a rare occurrence in the anterior mandible, the diagnostic journey outlined in this case report highlights the challenges clinicians face in distinguishing between seemingly similar gingival enlargements. The resemblance to pyogenic granuloma, a more common entity, emphasizes the need for a meticulous approach that extends beyond clinical observation.[8] Radiological assessments and, perhaps most importantly, histopathological examinations of biopsy specimens contribute to the precision required in diagnosing POF.[13]

4. Conclusion

The presented case report not only sheds light on the unique clinical presentation of a rare POF occurrence in the anterior mandible but also underscores the imperative role of radiological and histopathological evaluations in confirming the diagnosis. As we navigate the intricacies of gingival enlargements, this case serves as a reminder of the nuanced approach required for accurate diagnosis and subsequent effective management. The synergy of clinical, radiological, and histopathological assessments is paramount in unraveling the mysteries of rare occurrences like POF, ensuring that patients receive timely and appropriate care for optimal outcomes.

5. Source of Funding

None.

6. Conflict of Interest

None.

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Cite this article: Deepthi TR, Mathew PA, Yeshoda TG, Khargekar N, Kappiamkunnath S, Adarsh VJ. Peripheral ossifying fibroma: A rare case report and review of literature. *J Orofac Health Sci* 2024;11(2):86-88.