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BRAZILIAN JOURNAL OF DENTISTRY AND ORAL RADIOLOGY

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PUBLICAÇÕES CIENTÍFICAS DE ACESSO ABERTO

Case Report

Radiographic Analysis and Surgical Management of Osteoma in the Mandibular Angle Region: Case Report

Luiza Clertiani Vieira Alves [1,*], **Paulo Henrique Rodrigues Carvalho** [2]

[1] Master's student in Dentistry Graduate Program (PPGO/UFC), Federal University of Ceará, Fortaleza, CE, Brazil.
[2] Dentist specialized in Oral and Maxillofacial Surgery and Traumatology, Fortaleza, CE, Brazil.

* Correspondence: clertiani@gmail.com.

Abstract: This article presents a case study of mandibular osteoma, highlighting its rarity, diagnostic challenges, and the efficacy of surgical excision as treatment. The relevance of considering osteomas in the differential diagnosis of asymptomatic mandibular masses is discussed, addressing the challenges encountered in differentiating them from other bone pathologies. The discussion emphasizes the importance of clinical history in identifying potential etiologies, especially in cases of trauma. Treatment, centered on surgical excision, is emphasized for its effectiveness, low recurrence rate, and absence of malignant transformation, contributing to a positive prognosis. This case underscores the need for a meticulous approach in the diagnosis and management of mandibular osteomas, aiming to optimize clinical outcomes.

Keywords: Mandibular Osteoma; Radiographic diagnosis; Surgical Excision.

Citation: Alves LCV, Carvalho PHR. Radiographic Analysis and Surgical Management of Osteoma in the Mandibular Angle Region: Case Report. Brazilian Journal of Dentistry and Oral Radiology. 2022 Jan-Dec;1: bjd9.

doi: https://doi.org/10.52600/2965-8837.bjdor.2022.1.bjd9

Received: 2 March 2022
Accepted: 30 April 2022
Published: 10 June 2022

1. Introduction

Mandibular osteomas, despite being rare benign bone lesions, require significant clinical and surgical attention due to their potential interference with speech, chewing, and individual aesthetics. They are generally asymptomatic and characterized by a pattern of slow and continuous growth. Traumas and infections are suggested as triggering factors for excessive bone activity. The actual prevalence of osteomas is unknown, and there appears to be no sexual predilection, with mandibular osteomas being a rare entity [1]. The etiology of osteomas has been the subject of various theories. Currently, the reactive theory is widely accepted, suggesting a combination of trauma and muscular activity as the initiation mechanism. Minor traumas, often forgotten by patients, can trigger osteoma formation due to subperiosteal bleeding or edema, with subsequent muscle traction causing an osteogenic reaction. This mechanism is supported by the fact that continuous muscle traction could perpetuate osteoma formation [2].

The differential diagnosis should consider exostoses, osteoblastoma, osteoid osteoma, central ossifying fibroma in an advanced stage, or complex odontoma. Osteomas are usually diagnosed after radiographic and histopathological confirmation and are classified as "true osteomas". Surgical excision is the treatment of choice and is performed with adequate safety margins, with lesions rarely showing recurrence and no evidence of malignant transformation [3]. It is essential to evaluate patients with osteoma for Gardner syndrome, which presents a triad of colorectal polyposis, skeletal abnormalities, and multiple impacted or supernumerary teeth. These patients may also experience gastrointestinal symptoms such as rectal bleeding, diarrhea, and abdominal pain [4].

2. Case Report

A 35-year-old female patient presented to the dental office complaining of an asymptomatic bone growth in the right mandibular angle. Upon physical examination, a

hard mass was palpated, without inflammatory signs or changes in the coloration of the overlying skin. Panoramic radiography revealed a well-defined radiopaque lesion located in the region of the right mandibular angle. The lesion appeared homogenous, suggesting compact growth. Based on the clinical and radiographic examination, a diagnosis of osteoma was made (Figure 1). The patient underwent surgical intervention for lesion removal. The procedure proceeded without complications, and the removed material was sent for histopathological examination, which confirmed the diagnosis of osteoma. The patient progressed favorably, without postoperative complications, and showed no signs of lesion recurrence.

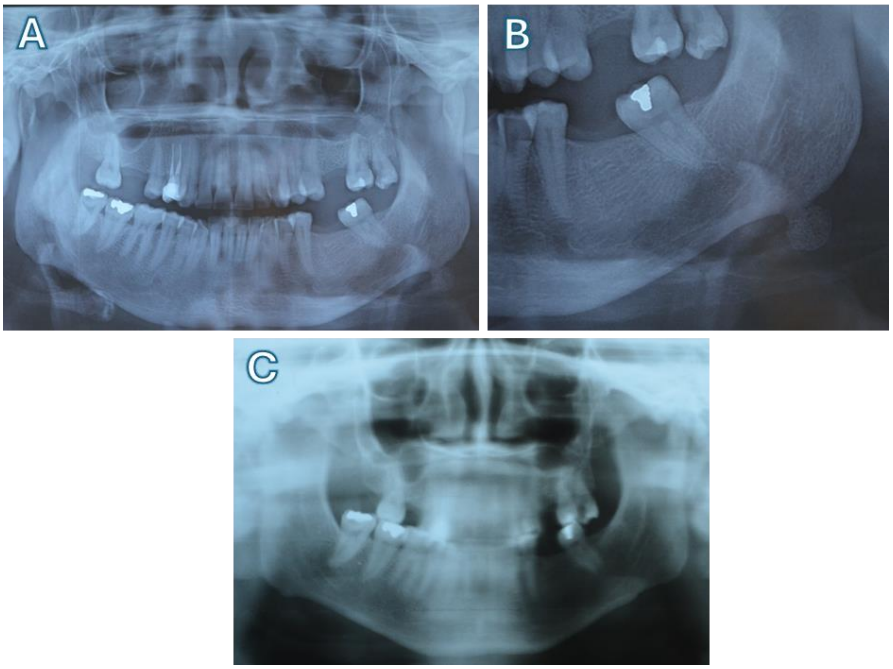

Figure 1: A. Preoperative panoramic radiograph displaying osteoma in the region of the right mandibular angle. B. Radiograph detailing the location and extent of the osteoma. C. Postoperative panoramic radiograph showing the mandible after surgical removal of the osteoma.

3. Discussion

The literature on mandibular osteomas, enriched by case studies and systematic reviews, sheds light on their clinical manifestations, radiographic and histological characteristics, as well as therapeutic strategies. The investigation conducted by Nayak et al. [1] highlights the clinical presentation of these bony formations, underscoring the need to include them in the differential diagnosis for asymptomatic masses in the mandible, which points to the clinical relevance of these findings. The diagnostic complexity associated with osteomas is well illustrated by Kaplan et al. [2], who discuss the challenges in differentiating solitary central osteomas from other bone conditions, emphasizing the importance of a thorough evaluation.

The potential reactive etiology of osteomas, especially in the post-traumatic context, is explored by Cutilli and Quinn [3]. This aspect highlights the value of a detailed history to identify possible triggering events, emphasizing the intersection between clinical presentation and history in understanding these entities. In turn, Bodner et al. [4] address the clinical management of osteomas, identifying surgical excision as an effective treatment with a low recurrence rate. This procedure, in addition to resolving present symptoms, serves as a preventive measure against future complications arising from tumor growth.

It is important to note the exceptional rarity of recurrences post-excision and the absence of reports on malignant transformation of osteomas, which corroborate the generally favorable prognosis after surgical intervention. The context of these studies emphasizes not only the multidisciplinary approach necessary for the diagnosis and treatment of mandibular osteomas but also reinforces the effectiveness and safety of current interventions.

4. Conclusion

Based on the clinical and radiographic data presented and considering the consulted scientific literature, it can be concluded that the mandibular osteoma treated in this clinical case represents a rare but well-defined pathological entity. The patient presented with asymptomatic bone growth in the region of the mandibular angle, and the surgical approach for lesion removal was successful, with uncomplicated postoperative recovery and no signs of short-term recurrence. This case rein-forces the importance of accurate diagnosis and appropriate surgical intervention for osteomas, especially when they reach dimensions that may affect aesthetics and functionality, even though the tendency for growth is slow and the likelihood of recurrence is low after complete excision.

Funding: None.

Research Ethics Committee Approval: We affirm that the participant consented to the research by endorsing a clear consent document, and the investigation adhered to the ethical standards outlined in the Helsinki Declaration.

Acknowledgments: None.

Conflicts of Interest: None.

Supplementary Materials: None.

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