

Mandibular osteonecrosis associated with bisphosphonate use in elderly patient: a case report

Dieiferson Thiers Oliveira Carneiro ¹, Jessika Fontoura Marques ^{1,*}

¹ OralDents, Fortaleza, CE, Brazil.

* Correspondence: dieiferson@hotmail.com.

Abstract: Not applied.

Keywords: Osteonecrosis; Bisphosphonates; Tomograph.

Citation: Carneiro DTO, Marques JF. Mandibular osteonecrosis associated with bisphosphonate use: a case report. Brazilian Journal of Case Reports. 2023 Jan-Dec;2: bjd22.

doi: <https://doi.org/10.52600/xxxx-xxxx.2023.1.bjd22>

Received: 5 April 2023

Accepted: 7 May 2023

Published: 1 June 2023



Copyright: This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0).

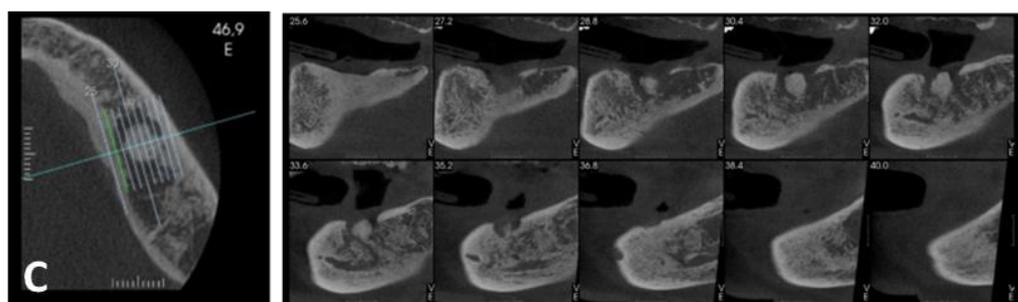
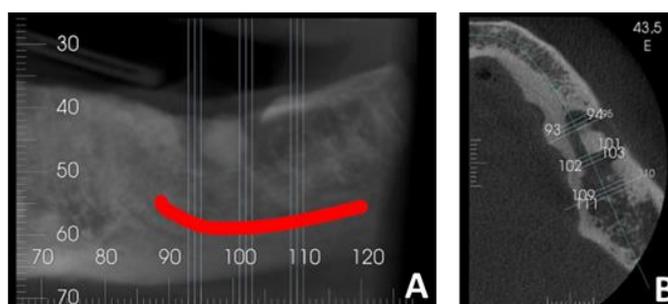


Figure 1. A. Panoramic reconstruction. B. Axial section. C. Sagittal sections. D. 3D reconstruction.

The tomographic image is of an 86-year-old female patient with a history of weekly use of sodium alendronate and concomitant antiarrhythmic medication. Distinct radiographic features are observed in the left mandibular body, not associated with the presence of dental elements, suggesting osteonecrosis. The hypodense area observed in the left mandibular body indicates a reduction in bone density, a common manifestation in

cases of osteonecrosis. Osteonecrosis results from compromised blood supply to the affected bone, leading to ischemic changes and subsequent necrosis. In the context of bisphosphonate use, such as sodium alendronate in this case, the risk of developing osteonecrosis of the jaw is heightened. Bisphosphonates can interfere with the normal bone remodeling process, potentially contributing to compromised vascularity and delayed bone healing [1].

The hyperdense structure within the hypodense area adds a layer of complexity to the interpretation. The presence of a hyperdense focus resembling bone density is concerning, suggesting the possible presence of a sequestrum. A sequestrum represents a segment of necrotic bone isolated from the surrounding viable tissue. The identification of a sequestrum has significant implications for the patient's prognosis, as it may contribute to prolonged inflammation and delayed healing. The patient's medical history, especially the use of antiarrhythmic medications in conjunction with bisphosphonates, highlights the importance of a multidisciplinary approach. Antiarrhythmic drugs can influence surgical considerations and postoperative management, requiring collaboration between oral and maxillofacial surgeons, cardiologists, and other relevant specialists to optimize patient care [2].

The decision to recommend surgical debridement of the osteonecrotic region in an operating room setting is based on the understanding that the removal of necrotic tissue and potential sequestra is crucial to promote a healthier environment conducive to healing. This surgical intervention aims not only to address the immediate concerns associated with osteonecrosis but also to mitigate the risk of additional complications, such as secondary infections or the progression of necrosis to adjacent areas. In conclusion, the clinical tomographic image provides valuable insights into the complex interplay of factors influencing the patient's oral health [3].

The hypodense area, suggestive of osteonecrosis, along with the presence of a hyperdense structure resembling a sequestrum, guides the decision-making process. The comprehensive approach, considering the patient's age, medication history, and specific imaging features, ensures a personalized and informed course of action. This case exemplifies the intricate nature of surgical dentistry, where a nuanced understanding of both clinical and radiographic aspects is crucial for successful patient management.

Funding: None.

Research Ethics Committee Approval: None.

Acknowledgments: None.

Conflicts of Interest: None.

Supplementary Materials: None.

References

1. Kün-Darbois JD, Fauvel F. Medication-related osteonecrosis and osteoradionecrosis of the jaws: Update and current management. *Morphologie*. 2021 Jun;105(349):170-187. PMID: 33281055.
2. Ogura I, Minami Y, Ono J, Kanri Y, Okada Y, Igarashi K, Haga-Tsujimura M, Nakahara K, Kobayashi E. CBCT imaging and histopathological characteristics of osteoradionecrosis and medication-related osteonecrosis of the jaw. *Imaging Sci Dent*. 2021 Mar;51(1):73-80. PMID: 33828964.
3. Akashi M, Wanifuchi S, Iwata E, Takeda D, Kusumoto J, Furudoi S, Komori T. Differences between osteoradionecrosis and medication-related osteonecrosis of the jaw. *Oral Maxillofac Surg*. 2018 Mar;22(1):59-63. PMID: 29224060.