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Abstract Submission FORM

Challenges of Long-Term Bisphosphonate Therapy: A Case of MRONJ with Mandibular Fracture in Osteometabolic Patient

SECTION: 2B

F. Buttacavoli^{1,2} *, R. Mauceri^{1,2}, G. La Mantia^{1,2,3}, M. Coppini^{1,2,3}, O. Di Fede¹, P. Tozzo^{2,4}, G. Campisi^{1,2}, V. Panzarella¹

AFFILIATION:

1. Department Me.Pre.CC., University of Palermo, 90127 Palermo, Italy.
2. Unity of Oral Medicine and Dentistry for Fragile Patients, Department of Rehabilitation, Fragility and Continuity of Care, University Hospital Palermo, Palermo, Italy.
3. Department of Biomedical and Dental Sciences, Morphological and Functional Images, University of Messina, Messina, Italy.
4. U.O.C. of Stomatology, A.O.O.R., Villa Sofia-Cervello of Palermo, Palermo, Italy.

Background. First-line pharmacotherapy for osteoporosis involves Bone-modifying Agents (BMA) therapy, typically comprising bisphosphonates (BPs). Prolonged BPs use can result in serious complications, notably medication-related osteonecrosis of the jaw (MRONJ). Pathologic mandibular fractures (PMF) are the most serious complications of MRONJ that may have significant consequences. While osteometabolic patients generally face a lower risk of MRONJ compared to cancer patients, there is a potential for a gradient in MRONJ risk over time. Specifically, osteometabolic patients who have been using BPs for more than 3 years, especially those lacking preventive care for dental-periodontal diseases, are at a heightened risk, as extended duration of BP intake and local dento-alveolar conditions are recognized risk factors for MRONJ. While the number of reported PMF cases due to MRONJ is limited, there is only sparse data available regarding its incidence, with reported rates ranging from 2.9% to 3.8%. Moreover, there is a lack of information on the incidence of MRONJ-related PMF in osteometabolic patients treated exclusively with BP. However, as MRONJ tends to progress over a long time in osteoporotic patients, it is reasonable to anticipate that proactive dental prevention measures may reduce the incidence of MRONJ-related PMF. Considering the significant impact of this complication on patients' quality of life, further research is warranted.

Patient and methods. A 75-year-old male patient presented to the Unit of Oral Medicine with Dentistry for Fragile Patients (AOUP "Paolo Giaccone" of Palermo) in January 2023 with complaints of pain localized to the region of tooth 3.7, which had been extracted in August 2022. No details were available regarding the surgical and pharmacological protocol that had been employed for the dental extraction. The patient had a longstanding history of osteoporosis and had been undergoing treatment with alendronate (70 mg weekly) for 15 years. Notably, the patient was a non-smoker and did not utilize dental prostheses. Radiographic assessment, including panoramic radiography (OPT) performed in December 2023 after the onset of the patient's reported symptoms, followed by cone-beam computed tomography (CBCT) in January 2024, was conducted by the patient before the visit and presented during the consultation. These examinations revealed distinctive radiographic features including non-healed bone of the post-extraction alveolar socket of tooth 3.7, an irregular appearance in the left mandibular angle region, and complete discontinuity of the basal cortical bone. Clinical examination revealed swelling localized to the left mandibular angle region, exhibiting tenderness on palpation. Intraoral examination disclosed the presence of exposed bone in the region corresponding to the extracted tooth 3.7, accompanied by purulent suppuration.

Results. Clinical and radiographic examinations confirmed a complicated stage 3 symptomatic MRONJ diagnosis according to SIPMO-SICMF classification, with the PMF also categorized at MRONJ stage 3 in AAOMS clinical staging. Following the diagnostic findings, the patient was promptly started on a therapeutic regimen comprising topical antiseptics and systemic antibiotic therapy, with the anticipation of continued therapeutic management under the supervision of the Plastic Surgery Unit at the same institution.

Conclusions. This report underscores the importance of primary (pre- and during BMA therapy) and secondary preventive strategies to mitigate complications linked to long-term bisphosphonate therapy, especially in elderly patients, aiming to prevent the development of MRONJ and to make its early diagnosis.

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