



Letter to the editor

Resolution without surgery of an advanced stage of medication-related osteonecrosis of the jaw (MRONJ) in a patient who could not suspend her treatment for osteoporosis



To the editor:

The treatment of patients with advanced stages of medication-related osteonecrosis of the jaw (MRONJ) is a therapeutic challenge for the maxillofacial surgeon; this gets exacerbated especially when the risk of skeletal fracture contraindicates the suspension of medical treatment for osteoporosis. In this case, the use of Teriparatide rhPTH (1–34) offers a good alternative because as an anabolic agent used in the treatment of patients with severe osteoporosis, it stimulates bone formation that resembles the same bone structure found in younger individuals [1]. As shown in this case, it quickly restores the characteristic damage in stages 2 and 3 of osteonecrosis of the jaw without the need of surgery.

Long-term treatment with antiresorptives leads to the accumulation of micro-damage in the skeleton and poor bone healing that results in complications such as atypical fracture of the femur and osteonecrosis of the jaw [2].

The occurrence of osteonecrosis in an osteoporotic patient has a very low incidence; this risk can be even lowered by the practice of preventive dental measures before the use of antiresorptives [3]. However MRONJ is a multifactorial condition and its pathophysiology is unclear [4], for this reason the maxillofacial surgeon is still faced with advanced stages of osteonecrosis that require radical surgical treatments resulting in sequels that compromise function, aesthetics, and deteriorate the patient's quality of life [5].

This case illustrates amazing changes in the mandibular structure of a patient who, in addition to osteoporosis, developed stage 3 of osteonecrosis. This is a 65-year-old patient who had been treated with antiresorptives for four years (Alendronate and Denosumab). She complained of a dull pain in the right mandibular body, which gradually increased in intensity. This was accompanied by the appearance of a fistula distal to the second right lower molar which was removed and replaced using a dental implant. The implant did not osseointegrate and

the pain got worse.

After that, the fistula persisted for more than 8 months. Then the patient developed cellulitis in the mandibular symphysis. As seen in Fig. 1 with the aid of Cone Beam Computed Tomography (CBCT) image, it is possible to observe osteolysis and diffused sclerosis in the medullar and cortical bone which extend from the right angle of the mandible to the right mandibular symphysis including the presence of bone sequestrations. This is a typical case of stage 3 MRONJ.

Due to the extension of the lesion to the basal area of the jaw, lack of healing of the surgical site and chronic exposure of the patient to antiresorptives, this case fulfilled the criteria for stage 3 medication-related osteonecrosis.

She received antibiotics (Ampicillin/Sulbactam 750 mg every 12 h for a month and a half) as a treatment for osteomyelitis. In this case we can not medicate the patient with bisphosphonates because of the osteonecrosis with an added risk of fracture by the suspension of Denosumab, therefore, the only possible treatment was the use of Teriparatide.

Teriparatide intake was started 15 days after the initiation of the antibiotic treatment and the condition of the patient changed almost immediately. The Cellulitis and the jaw pain disappeared and the fistula closed. Five months later a new CBCT image was taken to evaluate the jaw bone condition and there was no evidence of pathology Fig. 2.

The patient has remained stable for more than two years. Teriparatide treatment is limited to 24 months in a patient's lifetime. It is justified only in patients with high risk of fracture and it is well tolerated with few side effects, although daily subcutaneous injections and cost remain impediments to adoption in practice [6].

Unfortunately, Teriparatide is not approved yet for use in patients with a history of cancer due to a finding from a preclinical (animal) study in which Teriparatide was associated with the development of osteosarcoma [7].

This case is significantly important, due to the fact that it illustrates

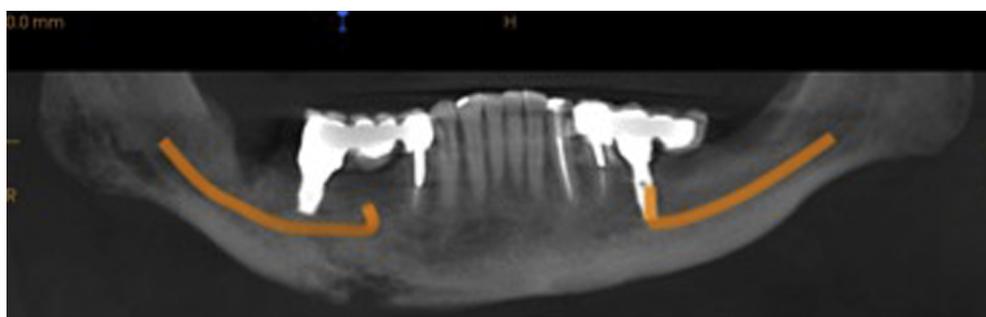


Fig. 1. Cone Beam Computed Tomography of the jaw: Osteolysis, sclerosis, and sequestrum in the right side of the jaw from the angle to the symphysis.

<https://doi.org/10.1016/j.oraloncology.2019.05.029>

Received 5 May 2019; Received in revised form 29 May 2019; Accepted 29 May 2019

Available online 04 June 2019

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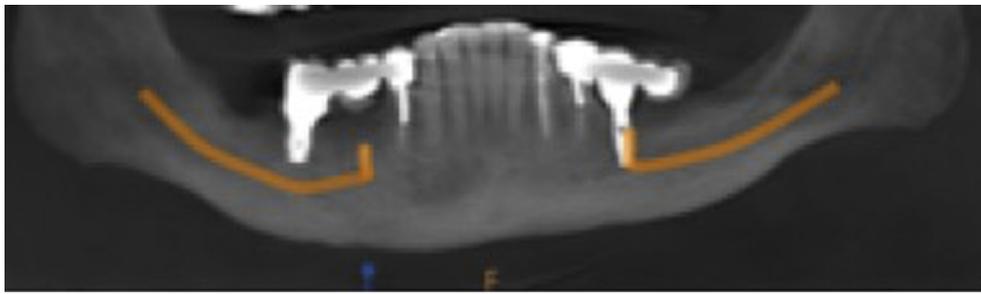


Fig. 2. Cone Beam Computed Tomography: Five months after beginning treatment with antibiotics for osteomyelitis (a month and a half) and Teriparatide for osteoporosis (five out of 24 months).

a total recovery of the bone structure of a jaw that had suffered vast damage in a patient who needed to continue with an effective treatment for osteoporosis. The most important part is that no surgical intervention was needed, therefore preserving the anatomy, the aesthetic appearance, and the total function. Two years of Teriparatide brings the opportunity for the skeleton to repair the microdamage accumulated and sets it up to continue the treatment with new antiresorptives that cannot be stopped at the risk of fractures.

Declaration of Competing Interest

The author declare that there is no conflict of interest.

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