

Osteonecrosis of the jaw

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Section: Musculoskeletal system

Area of Interest: Musculoskeletal system

Musculoskeletal bone

Procedure: Diagnostic procedure

Imaging Technique: CT

Special Focus: Drugs / Reactions Case Type: Clinical Cases

Authors: Carbullanca, Santiago; Garcia, Ivan; Solano, Alberto; Ares, Jesus

Patient: 77 years, female

Clinical History:

A 77-year-old woman presented with jaw pain and a non-healing lesion on the left mandible. The patient had a history of osteoporosis in treatment with bisphosphonates.

Imaging Findings:

Bone CT of mandible: Mixed sclerotic and lytic lesion of mandible with destructive changes of alveolar ridge and soft tissue swelling.

Discussion:

Bisphosphonate-related osteonecrosis of the jaw (ONJ), is a condition characterised by exposed necrotic bone in the mandible-maxilla region in patients with bisphosphonate exposure. Usually the bisphosphonates are used to treat severe osteoporosis, hypercalcaemia associated with malignancy, Paget disease, multiple myeloma and osteolytic bone metastases. The mechanism of action consist in the suppression of osteoclast activity, reduction of bone resorption and osteolysis [1].

Usual clinical presentation consist in jaw pain and non-healing ulcers with exposed nonviable bone.

The American Association of Oral and Maxillofacial Surgeons criteria are treatment with a bisphosphonate, exposed bone in the maxillofacial region lasting for 8 weeks and no radiotherapy involving the jaw.

The best imaging tool is bone CT with axial and coronal reformats to display the full extent of the lesion, in the early phase identifying a non-healing lesion and later diffuse destructive changes (mixed sclerotic/lytic lesion), which may be associated with fracture, soft tissue swelling or infection [2].

Treatment consist in local debridement and discontinuation of medication/bisphosphonate. This should stop the progression, however, the osteonecrosis is permanent.

The radiologist should be aware of ONJ in patient with non-healing lesions or with history of bisphosphonate exposure.

Differential Diagnosis List: Bisphosphonate-related osteonecrosis of the jaw, Osteomyelitis, Metastasis, Osteoradionecrosis

Final Diagnosis: Bisphosphonate-related osteonecrosis of the jaw

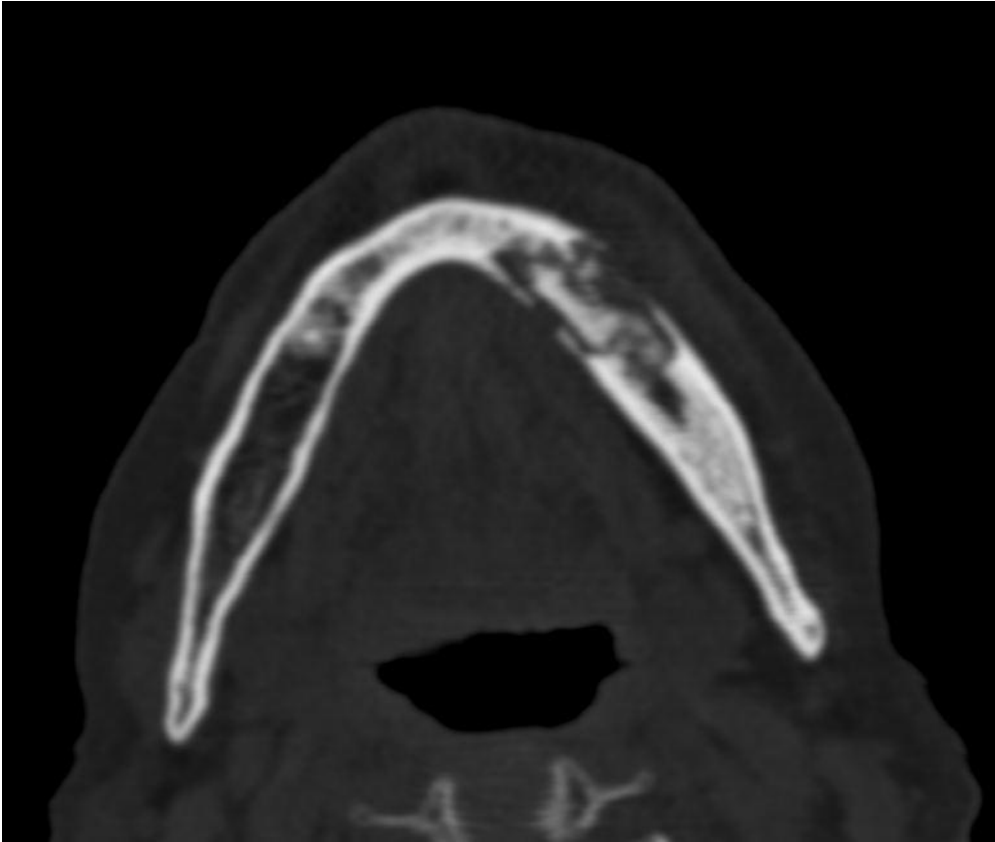
References:

Joan C. Lo, MD, Felice S. O'Ryan, DDS, Nancy P. Gordon, ScD, Jingrong Yang, MA§, Rita L. Hui, PharmD, MS, Daniel Martin, DDS, Matthew Hutchinson, DDS, Phenius V. Lathon (2010) Prevalence of Osteonecrosis of the Jaw in Patients With Oral Bisphosphonate Exposure. Journal of Oral and Maxillofacial Surgery 68:243–253 (PMID: [19772941](#))

Morag Y1, Morag-Hezroni M, Jamadar DA, Ward BB, Jacobson JA, Zwetchkenbaum SR, Helman J. (2009) Bisphosphonate-related osteonecrosis of the jaw: a pictorial review. Radiographics 29(7):1971-84 (PMID: [19926757](#))

Figure 1

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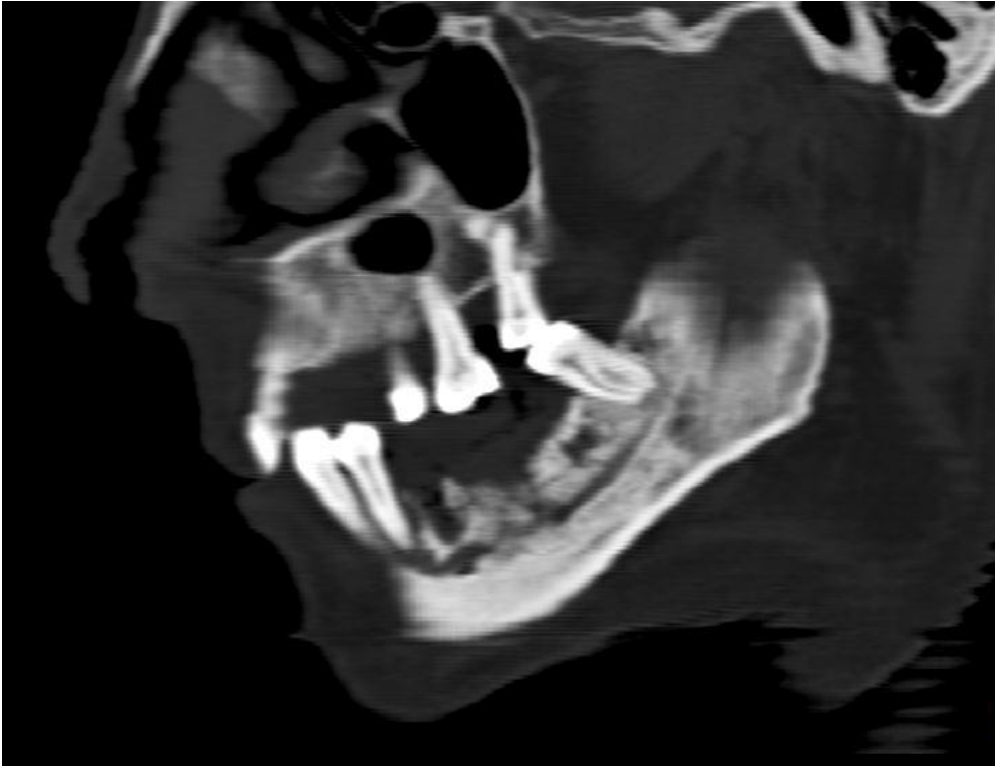


Description: NECT axial jaw

mixed sclerotic and lytic lesion of mandible with destructive changes of alveolar ridge. **Origin:** Carbullanca S, Department of Radiology, Hospital del Mar, Barcelona, Spain.

Figure 2

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Description: NECT sagittal jaw
mixed sclerotic and lytic lesion of mandible with destructive changes of alveolar ridge. **Origin:**
Carbullanca S, Department of Radiology, Hospital del Mar, Barcelona, Spain.

Figure 3

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Description: Volume rendering of the jaw **Origin:** Carbullanca S, Department of Radiology, Hospital del Mar, Barcelona, Spain.