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原文作者姓名：	Sahai S, Arora H, Aggarwal B
通訊作者學校：	Department of Radiodiagnosis and Imaging, DCA Imaging Research Center, New Delhi, India.
報告者姓名(組別)：	李昆峰 Intern F組
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內文：

Abstract: Bisphosphonate-associated osteonecrosis of the jaw usually occurs following dental procedures.this article is to simplify the selection of appropriate imaging

Introduction:

Osteonecrosis of the jaw (ONJ):1.cancer

2. hematological malignancies

3. postmenopausal osteoporosis or

Paget's disease receive

bisphosphonate therapy to alleviate

pain and reduce skeletal complications

Cause: ischemic or avascular osteonecrosis←inhibitory effect on circulating levels of vascular endothelial growth factor that affect the local blood supply to the bone.

Factors for osteonecrosis in patients on bisphosphonates: recent oral surgery, tooth extraction, denture use, poor oral hygiene or diabetes, comorbid conditions, and steroid use.

Case report

PI: 68 y/o male developed a lower jaw painless swelling during treatment for multiple myeloma with 12 cycles of chemotherapy 5–6 years previously. An incisional biopsy was attempted from the left

lower jaw about 2 months previously, which had been inconclusive.

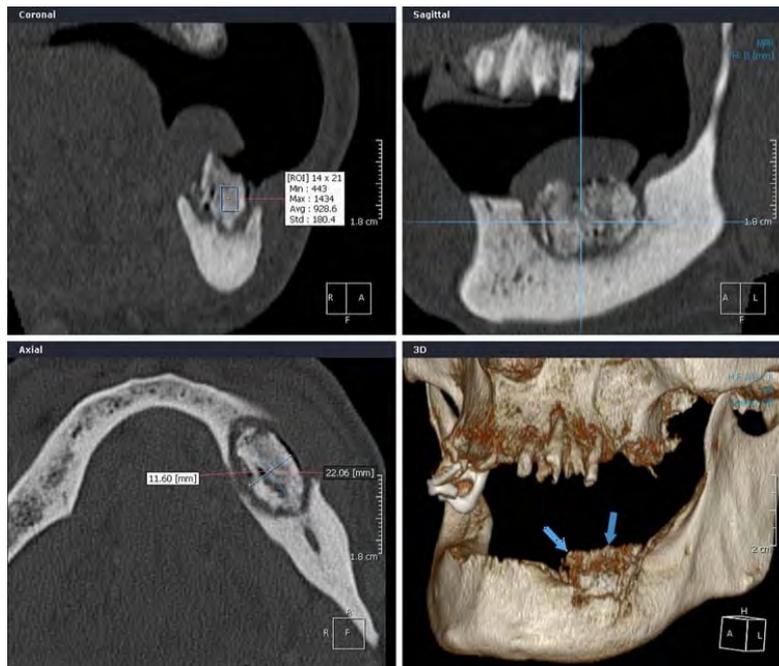
Clinical examination: Minimal extraoral swelling of the left lower face. Intraorally, a large area of exposed and seemingly nonvital (black discoloration) bone in the left parasymphysis and body of the mandible, adjoining left lateral border of the oral tongue appeared indurated and ulcerated with a fetid odor, No obvious fluid or purulent discharge from the lesional site was noted, no evidence of extra or intraoral sinus openings, No structural or functional dysfunction of the tongue was noted.



panoramic radiograph(Kodak 8000C Digital Panoramic):

A large radiopaque sequestrum was seen centrally in the lesion with a wide radiolucent band separating it from the peripheral sclerotic bone

CT scan(SOMATOM Sensation 64-Slice Scanner):



expansion of the left parasymphysis and body of the mandible with diffuse trabecular sclerosis, An ovoid osteolytic lesion (approximately 2.5 cm in the long axis and 1.6 cm in the short axis) was noted in the left parasymphysis and body with a large central sequestrum measuring approximately 2.4 X 1.2 cm in the anteroposterior and transverse dimensions. The sequestrum was heterogeneous in appearance with dense peripheral sclerosis, an amorphous internal structure, and interspersed osteoporotic densities, The margins of the lesion were distinct, yet irregular and rough. The sequestrum was separated from the underlying basal bone and peripheral alveolus by a homogenous lucent (hypodense) band. There was erosion of the superior cortical outline of the left inferior alveolar canal from the left mental foramen to the mesial aspect of left lower second molar region. There was poor definition of the outline of left mental foramen.

Discussion

1. Bisphosphonates inhibit osteoclastic action, have an antiangiogenesis effect, Inhibition of osteoclast function can also inhibit normal bone turnover, bony sequestrum were indicative of its poor vascularity.
2. The history of bisphosphonate use, presence of exposed necrotic bone for more than 8 weeks, and no previous history of radiotherapy of the jaw bones were consistent with typical characteristics.
3. Cross-sectional imaging: increased medullary bone density and thickening and sclerosis of trabeculae, indicating a chronically reduced local blood supply.
4. Sometimes these bone changes difficult to distinguish from: chronic periodontitis, dentoalveolar abscessing.
5. Manifestations of ischemic or avascular osteonecrosis could be observed with chronic mandibular osteomyelitis.
6. Mucosal involvement in ONJ could be confused with gingivitis or mucositis in the absence of history and clinical radiological examination.
7. patient history will, in most cases, allow for the exclusion of osteoradionecrosis and even metastatic bone tumors, neuralgia-inducing cavitation osteonecrosis
8. CT permits a better corticomedullary differentiation, delineation of cortical involvement, and lesional extent than panoramic radiography.
9. MRI reveals exposed areas of diseased bone as low signals on T1- and

T2-weighted images (WI) and relatively lower signals on inversion recovery, suggesting low water content; Unexposed diseased bone appears hypointense on T1WI and hyperintense on T2WI inversion recovery sequences, indicating high water content.

10.MRI should be considered in cases with extensive soft tissue involvement or where clinical signs of nerve involvement are noted.

11.Scintigraphy has been recommended as a screening tool to detect subclinical osteonecrosis in patients receiving bisphosphonates, primarily due to limitations of low resolution and the inability to distinguish inflammation from metastases.

12.Management of mandibular osteonecrosis includes systemic or oral antimicrobial use and close follow-up for asymptomatic oral lesions. Preoperative interruption of bisphosphonates for 3 months or longer with or without hyperbaric oxygen therapy.

題號	題目
1	Which of the following disease isn't "primary" caused by inflammation or infection? (A) Osteomyelitis (B) Osteoradionecrosis (C) sinusitis (D) Leprosy
答案(B)	出處：Oral & maxillofacial pathology, 2nd edition
題號	題目
2	Which of the following isn't a kind of bone pathology? (A) Paget's disease (B) Cherubism (C) Osteoma (D) Frey syndrome
答案(D)	出處：Oral & maxillofacial pathology, 2nd edition