

# Supportive and Palliative Care

- **Prevention and Treatment of Osteonecrosis (ONJ)**

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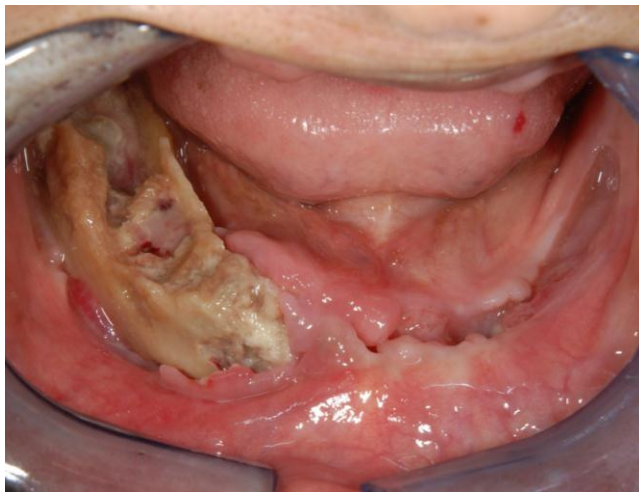
*MASCC Member and Chair – Bone Complications Study Group*

# Disclosure slide

- Consultant Expert:
  - Amgen, Inc.
  - Colgate Palmolive

# Definition: Jaw Osteonecrosis Associated with Medication (ONJ)

- **Definition:** The presence of necrotic bone, exposed or not, anywhere in the oral cavity in a patient taking DONJ (bisphosphonate, denosumab, antiangiogenics, or a combination of these drugs) and with no history of radiation therapy to the head and neck.



# ONJ Risk Factors

- Most cases associated with potent antiresorptive drug use (IV bisphosphonates and SC denosumab) in cancer
- **Presence of dental disease** (Aghaloo TL et al. Periodontal disease and bisphosphonates induced osteonecrosis of the jaws in the rat. JBMR 201; 26: 1871-1882)
- Time on medication and dose
- Dental extractions
- Ill-fitting dentures
- I.V. Bisphosphonate + Antiangiogenics ??

# Management of patients with ONJ

- Confirm diagnosis and staging of ONJ
  - Ruggiero SL, et al. American Association of Oral and Maxillofacial Surgeons position paper on bisphosphonate-related osteonecrosis of the jaws - 2009 update J Oral Maxillofac Surg. 2009 May;67(5 Suppl):2-12.
- Stages 0-3 (AAOMS) - decision on how to treat patient
  - Aggressiveness of treatment may depend quality of life issues
  - Presence of pain, infection, paresthesia, extent of bone necrosis, halitosis, difficulty eating and chewing

# Management of patients with ONJ

- When patients are doing well (AAOMS stages 0 - 2): Nicolatou-Galitis et al. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2011; 112:195-202
- **Use conservative approach:** systemic antibiotics when infection is active, topical mouth rinses, local debridement, elimination of sharp bone edges, routine dental therapy, oral hygiene protocol.
- If invasive routine extractions or surgery are indicated: use care and apply non-traumatic techniques. Follow post-surgery healing closely. Look for mucosal coverage and bone healing.

**AAOMS Stage 0:** No clinical evidence of necrotic bone, but non-specific clinical findings and symptoms such as pain, swelling, fistulation, erythema

- Systemic management, including the use of pain medication and antibiotics when indicated, mouth rinses, periodic follow-up



**AAOMS Stage 1:** Exposed and necrotic bone in patients who are asymptomatic and have no evidence of active infection

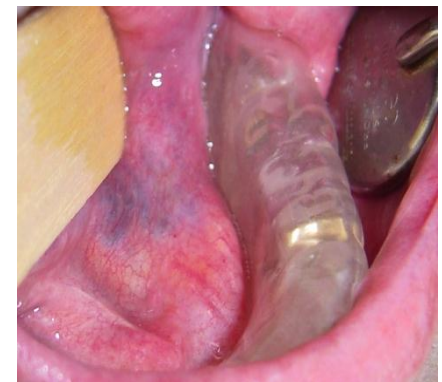
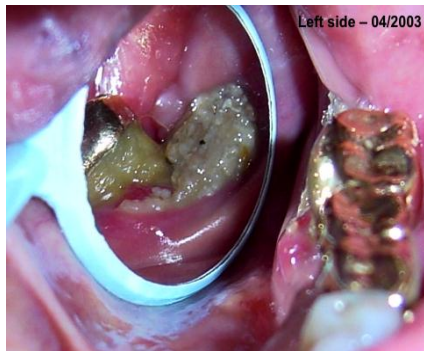
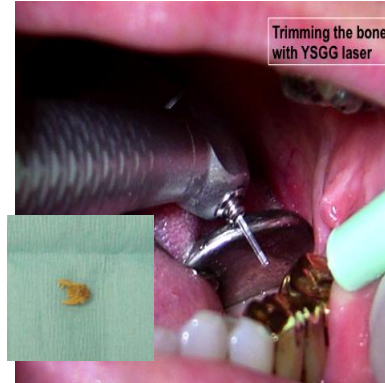
- Antibacterial mouth rinse (Chlorhexidine)/oral hygiene maintenance
- Clinical follow-up on a quarterly basis
- Patient education and review of indications for continued antiresorptive therapy





**AAOMS Stage 2:** Exposed and necrotic bone associated with infection as evidenced by pain and erythema in the region of the exposed bone with or without purulent drainage

- Superficial debridement to relieve soft tissue irritation
- Symptomatic treatment with oral antibiotics
- Pain control
- Oral antibacterial mouth rinse/oral hygiene maintenance



# Management of patients with ONJ

- When patients are not doing well (AAOMS stage 3)
  - Invasive surgery, resection, laser therapy, long-term systemic antibiotics, topical antibiotics, oral hygiene protocol.
  - Observe healing post-surgery.
  - Wound site closure and bone healing.

**AAOMS Stage 3:** Exposed and necrotic bone in patients with pain, infection, and one or more of the following: exposed and necrotic bone extending beyond the region of alveolar bone,(i.e., inferior border and ramus in the mandible, maxillary sinus and zygoma in the maxilla) resulting in pathologic fracture, extra-oral fistula, oral antral/oral nasal communication, or osteolysis extending to the inferior border of the mandible of sinus floor

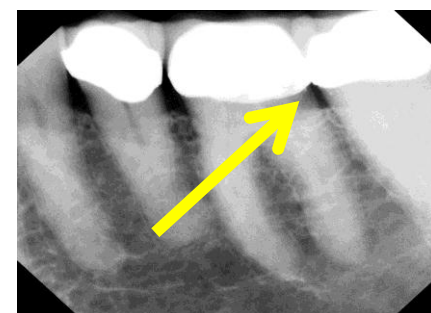
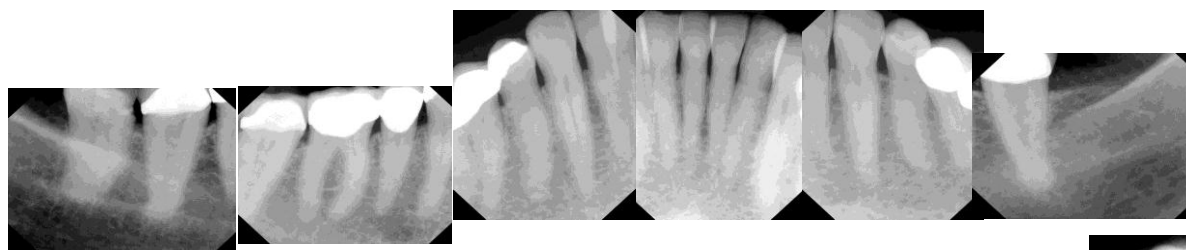
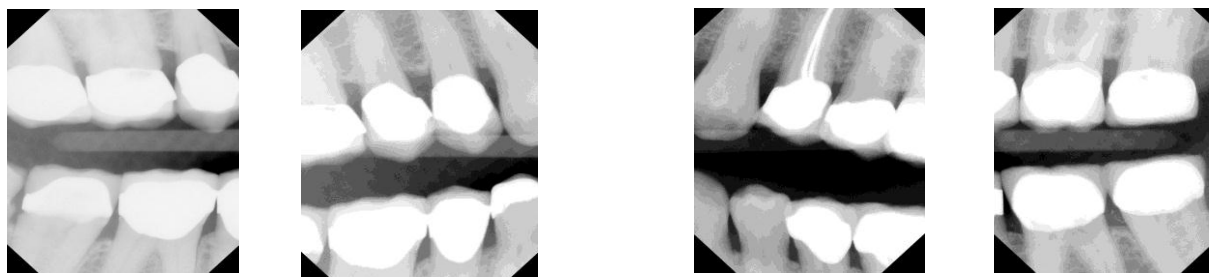
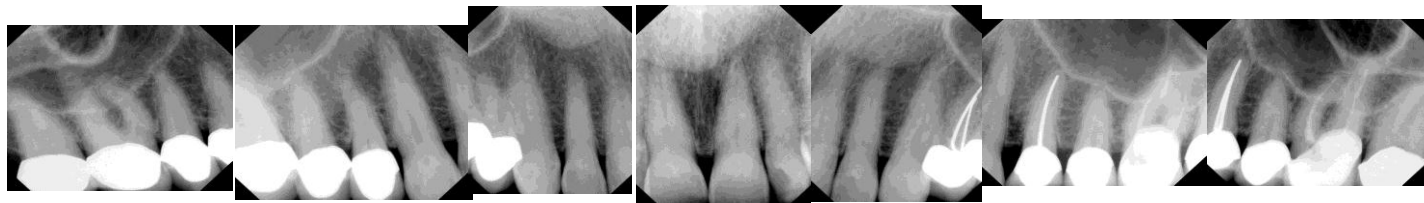
Antibacterial mouth rinse

Antibiotic therapy and pain control

Surgical debridement/resection for longer-term palliation of infection and pain



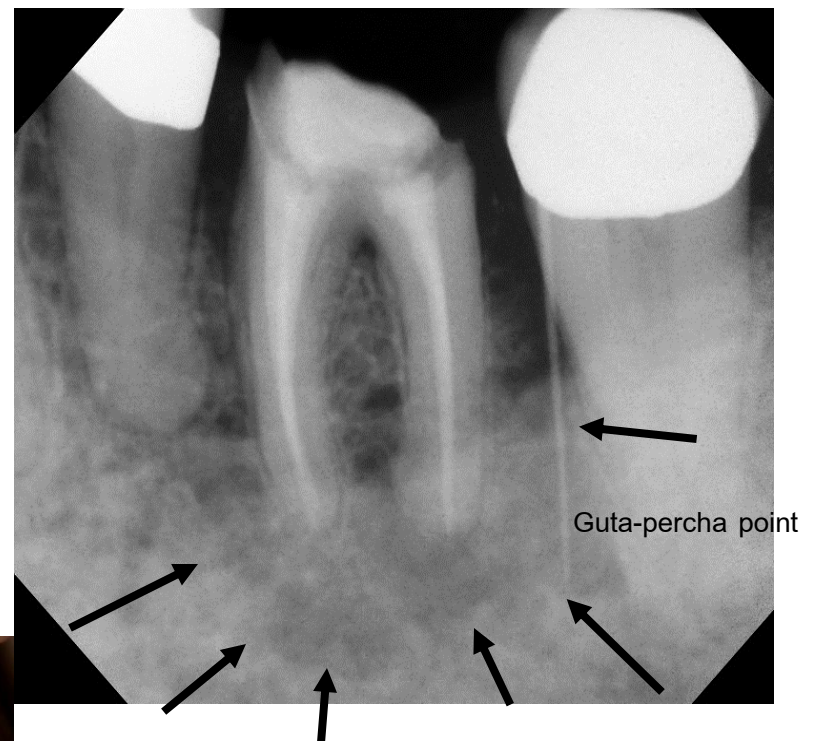
Dr Ian Hewson - Australia



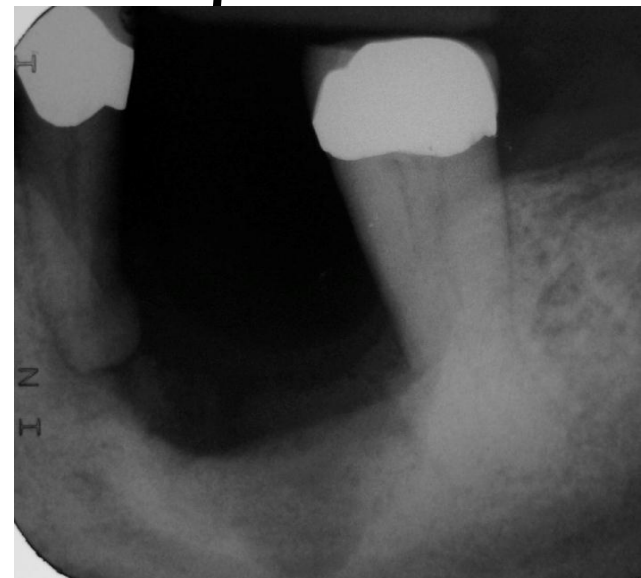
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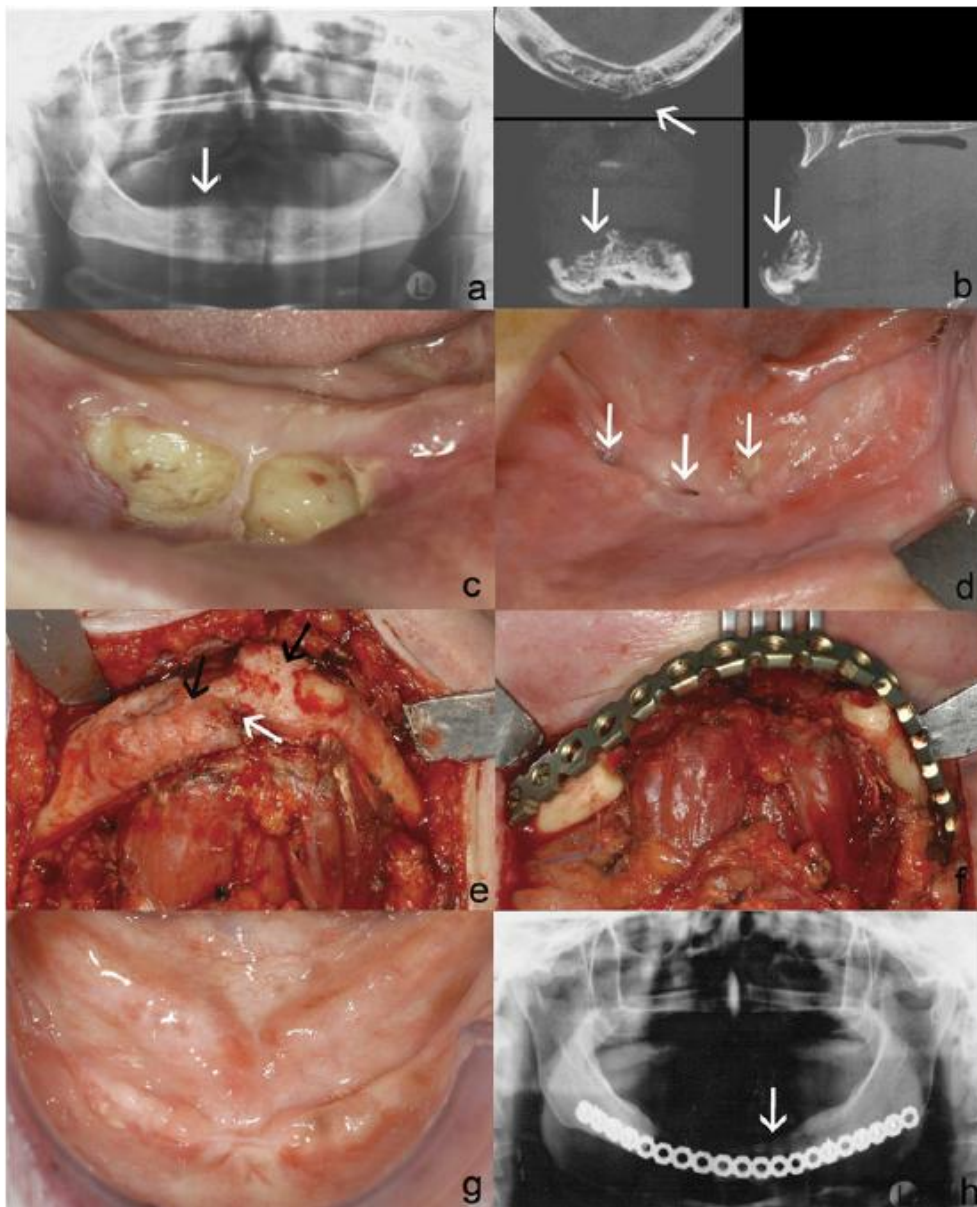


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Wilde F et al. The role of surgical therapy in the management of bisphosphonates-related osteonecrosis of the jaw. Oral Surg Oral Med Oral Pathol Radiol 2011; 111:153-163

# Treatment of ONJ: Summary

- Patients with ONJ should be managed by professionals with experience in managing such lesions.
- Use of systemic antibiotics is recommended for patients with active infection and or clinical paresthesia.
- Home oral hygiene maintenance and oral rinses with chlorhexidine.
- Conservative protocol with periodic clinical evaluation of the progress of disease in ONJ stages 1 & 2
- Pain management as needed
- Surgical intervention in advanced cases (stage 3 AAOMS) and non-responding lesions

# Prevention of ONJ – protocol for patients who will start treatment or in early treatment with suspected drugs

- Informed consent
- Initiation of oral hygiene protocol (chlorhexidine rinses, brushing and flossing)
- Diagnose the extent of dental disease
- Perform risk minimization and therapy protocol with patient
- Antibiotic therapy if active infection present. (penicillin-VK 500mg tabs, loading dose and 1 tab qid until evidence of post-surgical healing)
- Healing follow-up and wound care

- Ferlito S et al. Preventive protocol for tooth extractions in patients treated with zoledronate: a case series. J Oral Maxillofac Surg 2011; 69: e1-4 Epub Apr 2
- Lodi G et al. Tooth extraction in patients taking intravenous bisphosphonates: a preventive protocol and case series. J Oral Maxillofac Surg 2010; 68: 107-10
- Schubert M et al. The Saxon Bisphosphonate Register- Therapy and prevention of bisphosphonate-related osteonecrosis of the jaws. Oral Oncol 2012; 48: 349-354
- Dimopoulos MA et al. Reduction of osteonecrosis of the jaw (ONJ) after implementation of preventive measures in patients with multiple myeloma treated with zoledronic acid. Ann Oncol 2009; 20: 117-120.
- Ripamonti CI et al. Decreased occurrence of osteonecrosis of the jaw after implementation of dental preventive measures in solid tumor patients with bone metastases treated with bisphosphonates: The experience of the National Cancer Institute of Milan. Ann Oncol 2009; 20: 137-145.



Prevention of ONJ – protocol for patients who will start  
treatment  
or in early treatment with DONJ

- Collaboration between oncologist, nurse and dental professional is the most important measure to prevent ONJ or to lead to early diagnosis and management!
- Patient education also plays a very important role!!

# Thank you!



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