

# ONJ UPDATE 2024

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### Abstract Submission FORM

#### OSTEONECROSIS OF THE JAW ASSOCIATED TO PEMBROLIZUMAB: A CASE REPORT

SECTION: 2A

AUTHORS (max 8): Contrassegnare SPEAKER con “\*”

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**Background.** Medication related osteonecrosis of the jaw (MRONJ) is a potential adverse outcome associated to the treatment with antiresorptive agents and antiangiogenic medications. In the literature, some cases of MRONJ have been described in association to Immune Checkpoint Inhibitors in cancer therapy, including ipilimumab, nivolumab and pembrolizumab. Pembrolizumab is a humanized monoclonal antibody directed against Programmed cell death protein 1 (PD-1) and represents the treatment of choice for metastatic non-small-cell lung cancer (NSCLC), due to its efficacy in extending both progression-free survival and overall survival. We describe a case of MRONJ associated to Pembrolizumab to enhance awareness and provide better guidance for dental treatment in the context of cancer patients undergoing pembrolizumab therapy.

**Patients and methods.** In September 2023, a 69-year-old male patient was referred to the Unit of Dentistry and Oral Surgery of the University of Pisa for the development of a painful mucosal lesion. Medical history was significant for hypothyroidism, depressive syndrome and metastasizing NSCLC. The patient did not have documented allergies, occasionally smoked cigars and did not report alcohol consumption. The patient was under medication with levitaceram and levothyroxine, and had received a total of ten infusions of pembrolizumab (administered four times a week) for the treatment of NSCLC. The patient complained the presence of pain in the right maxillary region at the level of the edentulous alveolar crest. Clinical examination revealed the presence of a fistula along with suppuration, persisting for longer than 8 weeks and involving the maxillary buccal gingiva at the level of the missing element teeth 1.2, 1.3. This area was tender and painful to palpation. Computed tomography revealed a moth-eaten radiolucent pattern, in the absence of bone sequestrum. According to the MRONJ classification of the Italian Society of Oral Medicine and Pathology, this case was a stage 2b.

**Results.** After MRONJ diagnosis, conservative treatment was performed and involved one session of professional oral hygiene with reinforcement of domestic oral hygiene maneuvers and prescription of 2% chlorhexidine mouthwash to be used twice daily for 14 days. Medical treatment with amoxicillin 1g/day and metronidazole 750 mg/day was prescribed for 14 days. The patient was clinically re-evaluated after two weeks. There were no signs of complete healing at this stage, only stabilization of necrosis and symptoms improvement. Surgical intervention was then scheduled, and involved local resection, soft tissue debridement, and curettage. Any residual sequestra were removed to ensure healing by first intention. The resection margins were extended until obtaining spontaneously bleeding bone. Lesion fragments were sampled and sent for histology. Follow-up was performed at 1 week, 1 month, and 3 months after surgery. Complete healing with resolution was observed.

**Conclusions.** This is the fourth case described in the literature reporting ONJ onset following the treatment with Pembrolizumab. The symbiotic relationship between the immune system and osteoclasts is considered the reasoning for the occurrence of immunotherapy-related ONJ. Given the promising potential of Immune Checkpoint Inhibitors in managing metastatic malignancies, it appears relevant to include oral cavity screening in patients scheduled for treatment with these medications.

#### REFERENCES:

1. Park JH, Alfafara AM, Park YL, Bae JH, Kim SJ. Medication-related osteonecrosis of the maxilla: Prognosis of oral surgery combined with endoscopic sinus surgery. *Oral Dis.* 2021 May;27(4):962-969.
2. Pennings I, Moskowitz A, Shah G, Estilo C, Huryn JM, Yom SK. Osteonecrosis of the jaw associated with pembrolizumab. *Oral Surg Oral Med Oral Pathol Oral Radiol.* 2023 Jul;136(1):e11-e14.

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