

# Osteoradionecrosis

Osteoradionecrosis (ORN) refers to the degenerative changes seen in bone following local radiation, particularly in head and neck cancer. ORN can present as neck or facial pain and may be confused with tumor recurrence. Magnetic resonance imaging (MRI) and positron emission tomography (PET) scans are often inconclusive, requiring percutaneous biopsy to differentiate ORN from infection and recurrent disease. We reviewed the utility of pre-procedural imaging in guiding the decision to biopsy in cases of ORN.

**CASE DESCRIPTION:** Eight patients with a history of prior head and neck cancer, radiation therapy and suspected ORN at the skull base, OC junction, and atlantoaxial spine were identified retrospectively from a single academic medical center. In four cases, MRI findings and PET imaging were negative for recurrence. One patient in this group underwent an aborted biopsy. Four patients had MRI concerning for infection or recurrent tumor with PET-positive lesions. Three patients in this group underwent biopsy that was negative for recurrent tumor. One patient developed an arteriovenous fistula after biopsy. The fourth patient was observed and did not demonstrate progression at 5 months. At last follow-up for all patients, there was no evidence of tumor recurrence or metastasis at the index site to indicate a misdiagnosis for recurrent tumor.

**CONCLUSIONS:** This case series highlights that PET scanning may not be useful in predicting which patients will benefit from biopsy for ORN, as no patients with PET-positive lesions had histopathological evidence of tumor recurrence or metastasis on biopsy <sup>1)</sup>.

1)

Goodsell K, Sullivan PZ, Macaluso M, Blue R, Ghenbot Y, Al-Bayar A, Ozturk AK, Pukenas B, Schuster J. Osteoradionecrosis of the occipitocervical junction following radiation for head and neck cancer: A report of eight cases. *World Neurosurg.* 2020 Mar 4. pii: S1878-8750(20)30415-0. doi: 10.1016/j.wneu.2020.02.140. [Epub ahead of print] PubMed PMID: 32145424.

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