

A retrospective review of the incidence of osteoradionecrosis in Head and Neck Cancer (HNC) patients in Southern Ireland, 2010-2021 and factors associated with its development.

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Background:

Osteoradionecrosis (ORN) is a debilitating long-term side effect of radiotherapy (RT) treatment in HNC patients. International incidence rates range from 0.4% to 56%. This is a novel Irish study that assesses ORN incidence rates in HNC patients attending the CUDSH Dental Oncology Unit (2010-2021) and explores potential precipitating factors.

Methods:

Retrospective review of 1,050 HNC patients treated in Dental Oncology (2010-2021) identified 47 patients who developed ORN. Their medical, dental and radiotherapy records were retrospectively reviewed; patient, tumour, ORN and treatment-related variables were extracted and analyzed using SPSS and Pearsons Chi-square test.

Results:

ORN incidence rate was low (4.4%). Median time to ORN development was 21 months. Seventeen ORN patients received pre-RT mandibular surgery. ORN development in the surgical site was statistically significant ($p < .001$), at radiation dose ≥ 60 Gy ($p = .035$), within 12 months of RT treatment ($p = .044$), due to induced causes ($p = .029$), and without resolution ($p = .019$).

Conclusion:

Low incidence rates suggest intensive dental intervention is beneficial in reducing ORN risk. Site of pre-RT mandibular bone surgery was a significant risk factor for ORN. These practice changing findings suggest that contouring the bone surgery site and assigning a dose constraint to these areas, where feasible, may minimize ORN risk.