

Title

Comparison of quality of life among Carcinoma tongue patients treated with EBRT alone and EBRT & BT

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Purpose or Objective

To compare the health-related quality of life (QOL) in patients with carcinoma tongue treated with external beam radiation therapy (EBRT) alone versus EBRT to the neck and radical high dose rate brachytherapy (HDR-BT) to the tumour bed.

Materials and Methods

63 tongue cancer patients who underwent surgery followed by adjuvant radiotherapy either in the form of EBRT alone or EBRT and HDR-BT from January-2015 to October-2021 were included in this study. 35 patients received EBRT alone to bilateral neck and tumour bed with or without concurrent chemotherapy. 28 patients treated with EBRT to bilateral neck with or without chemotherapy and HDR-BT alone to tumour bed. Both arms received 46-50 Gy to the uninvolved nodal stations with a boost up to 60 Gy to the involved nodal stations by EBRT. The tumour bed in the EBRT alone arm received 60 Gy & tumour bed in the HDR-BT arm received 36-39 Gy in 12-13 fractions by HDR brachytherapy alone. Primary end point was the QOL, which was assessed by EORTC Quality of Life Head and Neck Module (QLQ H&N35) in both arms. Local recurrence (LR) and overall survival (OS) were assessed as secondary end points.

Results

Of 63 patients, 24 patients in EBRT group and 18 patients in EBRT+HDR-BT group were analysed at a median follow-up of 37 and 35 months respectively. The overall treatment time in EBRT+HDR-BT was up to 85 days (median 52.5 days) and EBRT group was upto 60 days (median 41 days). The QOL scores were: pain (7.4 vs 11.11), swallowing (33.33 vs 70.83), sensation of taste/smell (16.66 vs 25), speech (5.55 vs 6.94), social contact (12.96 vs 31.94) and social eating (33.33 vs 70.83) in the EBRT+HDR-BT and EBRT only group respectively. Among the head and neck single parameters, observed scores were dry mouth and sticky saliva (33.3 vs 40.28), loosening of teeth (11.11 vs 16.66), skin changes (1.85 vs 9.72), difficult mouth opening (11.11 vs 18.05), need for nutrition supplements (11.11 vs 22.22) and weight loss (3.70 vs 40.27) in EBRT+HDR-BT and EBRT only group respectively. Except weight loss (p value 0.01), none of other parameters attained statistical significance.

There is no significant difference in OS ($p=.55$) and occurrence of LR ($p =.93$) between the two arms.

Conclusion

This study proves that by delivering radical dose by brachytherapy to the primary tumor bed improves the QOL in patients with carcinoma tongue without any significant difference in locoregional recurrence. The studies related to quality of life in head and neck cancer treated with brachytherapy in the literature are not subsite specific. This study is specific to oral tongue cancers.