Comparison between Organ Preservation Surgery and Radiation in Early Supraglottic Carcinoma Is Limited by Bias

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Otolaryngology -- Head and Neck Surgery 2014 151: 182
DOI: 10.1177/0194599814536362

The online version of this article can be found at:
http://oto.sagepub.com/content/151/1/182.1

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What is This?
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No sponsorships or competing interests have been disclosed for this article.

We read with interest the article by Arshad et al comparing survival for early supraglottic cancer between definitive radiation and organ preservation surgery (OPS) using the Surveillance, Epidemiology, and End Results (SEER) database. The authors report significantly improved disease-specific survival (DSS) for stage I and II supraglottic cancers treated with OPS + neck dissection (ND) vs radiation, with 5-year DSS for stage II patients of 86% vs 60% (hazard ratio, 0.31; \( P < .001 \)), respectively. This result is remarkable and would have great importance for management decisions in early supraglottic cancer, if true.

However, we are concerned that the comparison is made between dissimilar groups of patients in relation to neck metastases and that the subsequent bias is not adequately taken into account in the interpretation of the results. Based on the methods described, the authors excluded from the analysis all patients with node-positive (N+) disease. Since in the SEER database, staging represents a “best stage,” taking all available clinical and pathologic information into account, the primary-radiation group in this study was clinically N–, and the OPS + ND group was pathologically N–. The radiation group would have included patients with occult nodal metastases, but the OPS + ND group would have excluded them. Based on the reported rate for occult metastases for T1 and T2 supraglottic cancer identified by elective neck dissection, we would expect that 30% of the patients in the radiation group had occult nodal metastases. Since the presence of nodal metastases is a powerful negative prognostic factor for survival and signifies a more aggressive behavior of the disease, the exclusion of these patients from the OPS + ND group would be expected to have a significant positive effect on the survival outcome and is a significant source of bias in the study.

We appreciate the role that epidemiologic studies such as this can have in provoking further investigation, but the biased results reported by Arshad et al are unlikely to lead to a useful hypothesis and should not be used to guide clinical decision making.

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Disclosures
Competing interests: None.
Sponsorships: None.
Funding source: None.

References

Response to “Comparison between Organ Preservation Surgery and Radiation in Early Supraglottic Carcinoma Is Limited by Bias”

DOI: 10.1177/0194599814536363

No sponsorships or competing interests have been disclosed for this article.

We thank Drs Sperry and Pagedar for their interest in our article. We were aware of the issue of how the Survival, Epidemiology, and End Results (SEER) data classify stages and expected this concern from others. For that reason, we specifically addressed this concern in our Discussion section. In it, we remark the following:

One reason for the worse outcomes in the RT-only group and the OPS-only group could be the presence of occult nodal metastases. Because the true involvement of the