# Head and Neck Cancer and the Elderly Patient

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**KEYWORDS**

• Head and neck cancer • Elderly medicine • Surgical therapy • Radiation therapy
• Chemotherapy • Comprehensive elderly assessment

**KEY POINTS**

- Surgery, radiation, and chemotherapy have equivalent oncologic efficacy in elderly patients.
- Elderly patients are more likely to suffer from multiple comorbid conditions and decreased functional status.
- Comorbid conditions and decreased functional status increase the risk of treatment-induced morbidity.
- Using screening tools to evaluate comorbid conditions and functional status can help stratify patients, predict treatment toxicity, and guide treatment decisions.
- Elderly patients should be closely observed for toxicity during treatment.

## INTRODUCTION

Head and neck cancer is the sixth most prevalent malignancy worldwide.[10] It disproportionately affects older patients, with approximately 50% of new head and neck cancer diagnoses occurring in patients over age 60, and 70% of deaths occurring in patients over age 70.[7] Older age has been shown to be an independent risk factor for head and neck cancer.[11] As the US population continues to age, there will be a higher percentage of patients requiring cancer treatment who are defined as elderly, with elderly defined by the National Institutes of Health National Institute on Aging as any patient 65 years of age or older.[12] It is, therefore, critical that health care providers have an understanding of the nuances of treatment of this disease in the elderly population.

A majority of elderly patients present with stage 3 or stage 4 disease.[3] Although many of these patients would benefit from aggressive, multimodality therapy, their

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advanced age and higher incidence of medical comorbidities can motivate providers to de-escalate their therapy. Moye and colleagues[5] showed this undertreatment is associated with poorer outcomes. Stage-appropriate multimodality therapy in elderly patients, however, led to equivalent survival outcomes as in younger controls in a large retrospective series. In addition, elderly patients are under-represented in the literature and there are few retrospective data and almost no prospective data to guide treatment modifications for this group of patients.[8] In an attempt to mitigate these challenges, screening tools have been developed to stratify elderly patients into those who would tolerate standard therapy versus those who would be at increased risk for suffering excess toxicity.

This article discusses the oncologic outcomes and risks associated with surgical management, radiation therapy, and chemotherapy in elderly head and neck cancer patients. In addition, currently available screening tools are reviewed and their role in identifying high-risk elderly patients discussed.

## SURGERY

Surgery is a common treatment modality for head and neck cancer and is a major determinant of locoregional control and treatment-associated morbidity. Multiple studies have shown that oncologic outcomes after primary surgery are independent of age (**Table 1**).[12–14] Four small retrospective single-institution series have compared survival outcomes for head and neck cancer patients treated with primary surgery between age groups. Three of these showed no difference in the 5-year survival rates between the older and younger groups.[12–14] Clayman and colleagues,[15] however, reported inferior survival in patients over the age of 80 compared with patients under the age of 65 but noted that the survival in the 80 plus group was equivalent to octogenarians without cancer. In 1 of the largest series, Bhattacharyya and colleagues used the Surveillance, Epidemiology, and End Results (SEER) database to compare 2548 surgically managed patients over age 70 with glottic, tongue, or tonsillar squamous cell carcinomas to younger controls. They found that there was a statistically significant decrease in overall survival and disease-specific survival in the glottic and anterior tongue subgroups but not the tonsillar subgroup. This trend was observed when each subgroup was stratified by stage but this was not consistently statistically significant. It is difficult to identify why the elderly group had an overall worse survival given that there is no description of differences in comorbidity or treatment received.

### *Perioperative Complications*

Perioperative complications after primary surgical management of head and neck cancer also seem largely independent of age. There are 5 retrospective series that have shown no increase in postoperative complication rates in elderly patients.[1,12–15] Zabrodsky and colleagues[9] found that advanced-stage disease, comorbidity, and longer operative times were independently associated with increased incidence of complications and found no such association with age. Audisio and colleagues[2] similarly found an association between comorbidity index, as measured by the Adult Comorbidity Evaluation (ACE)-27 or the Charlson Comorbidity Index, and major complications but not age. In a study looking at the 30-day readmission rates after laryngectomy, the elderly group had a higher readmission rate, but this was also correlated to comorbidities, marital status, extent of surgical resection, dysphagia, pneumonia, and cardiovascular complications.[16] Morgan and colleagues[17] did find a higher 30-day mortality rate for older patients in a large retrospective series; however, this