Introduction

With the recognition that intensity modulated radiation therapy (IMRT) directed at oropharyngeal tumors can often lead to chronic mucosal injury and fibrosis of the pharyngeal musculature, resulting in a long-term, debilitating swallowing difficulty, there has been renewed interest in using surgery as the primary treatment modality for oropharyngeal carcinoma, reserving chemotherapy and radiation therapy for adjuvant treatment. With advances in transoral robotic surgery (TORS) as well as the popularization of lateral pharyngotomy (LP), difficult to access oropharyngeal tumors have become more readily accessible through less invasive means. At our institution, efforts have been aimed at treating oropharyngeal tumors with minimally invasive surgery first in an effort to de-escalate adjuvant therapy and limit insult to swallowing apparatus while maintaining equivalent tumor control and patient survival rates. While the MD Anderson Dysphagia Inventory is a commonly used instrument for assessing post-treatment functional outcome with respect to swallowing in head and neck cancer patients, the Vanderbilt Head and Neck Symptom Survey (VHNSS) 2.0 also offers a comprehensive survey of adverse effects related to radiation therapy for head and neck cancer in general. However, its application to oropharyngeal cancer specifically has not been reported in the literature. In this paper we review normative data collected in administering the VHNSS 2.0 to patients with previously untreated squamous cell carcinoma of the oropharynx treated with TORS or LP, simultaneous neck dissection, and risk-adapted adjuvant therapy.

Methods and Materials

We analyzed patients treated by the Head and Neck Surgery service at the University of Tennessee from the years 2008-2014. Using the inclusion criteria that the patients (1) have a biopsy-proven squamous cell carcinoma of the oropharynx, including AJCC T1, T2, T3, and T4 carcinomas (2) have undergone TORS or LP as the surgical treatment of the primary site, and (3) have not have distant metastases or a concurrent primary tumor at the time of diagnosis. A total of 54 patients who were identified who met inclusion criteria. Post-operatively, each patient was presented at a telephone interview.

Results

A total of 54 patients with oropharyngeal cancer treated with TORS or lateral pharyngotomy, simultaneous neck dissection, and risk-adapted adjuvant therapy from 2008-2014 were identified. Of these patients, 36 (30 men, 6 women; mean age of 58 years) completed the VHNSS 2.0, a 50-item survey scored 0 (none) to 10 (severe), either as an online survey or over the telephone. 10 patients had been observed to have tongue primary, and 26 had palate tonsil primary. 1 patient was AJCC Stage II, 10 were Stage III, and 25 were Stage IV. 9 were classified as T1, T7 were T2, T7 were T3, and T7 were T4. 5 patients received no adjuvant therapy, 18 received adjuvant radiation (median dose of 60 Gy), and 13 received adjuvant chemoradiation (median dose of 63 Gy). A full range of scores was noted in 33 of the 36 patients who completed the survey. The questions that elicited the greatest number of severe symptom (score ≥ 7) answers were, “It takes me longer to eat because of my swallowing problem” (44%), “I have trouble eating certain foods” (42%), “I have trouble with dry mouth” (42%), and “My taste changes have altered the food that I eat” (39%). The swallowing/eating foods, xerostomia, hearing, and taste change subsections demonstrated the highest severe burden of symptoms, while the mucositis, pain, and dental health had the lowest severe burden of symptoms. In comparing patients who received no adjuvant therapy versus those who received adjuvant therapy (radiation or chemoradiation therapy), there was a significant increase in severe symptoms for those who received adjuvant therapy.

Discussion

The VHNSS 2.0 was designed to provide an expanded inventory of symptoms that included an emphasis on oral health outcomes present in the head and neck cancer population. To our knowledge, its application specifically to patients treated for oropharyngeal cancer with minimally invasive surgery followed by adjuvant therapy as indicated. Our data shows that patients in our cohort exhibit at least mild symptoms of toxicity (≥ 1) in each of the categories. The categories of “swallowing/eating foods” and “xerostomia” demonstrated the greatest number of responses reporting severe symptoms of toxicity (≥ 7). Our data shows that the length of time it takes to eat is the most commonly reported severe toxicity, followed by xerostomia, trouble eating solid foods, and altered food choices due to taste change. Severe toxicities concerning pain, dental health, and mucositis were less reported in our patient population, suggesting that problems related to consumption of solids and liquids are the most troubling to patients treated for oropharyngeal cancer. Examining the symptoms with respect to the adjuvant therapy received, patients receiving no adjuvant therapy reported less severe symptoms than those receiving adjuvant therapy, while there was no significant difference between those receiving radiation versus chemoradiation therapy.

Conclusions

We report the normative data of the Vanderbilt Head and Neck Symptoms Survey 2.0 from our experience treating patients with oropharyngeal cancer with a minimally invasive surgery first modality. In our patient cohort, difficulty with swallowing, xerostomia, and taste change are the most reported severe symptoms in the VHNSS 2.0, while dental health is the least reported.

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References