INTRODUCTION

Head and neck cancer surgery requires careful planning in the pre- and post-operative periods given the dramatic changes in deglutition, voice, and nutritional needs that occur after resection of upper aerodigestive tract cancers. Given the fact that on initial presentation 40% of patients with head and neck cancer are under malnourished, the potential for suboptimal outcomes post-operatively is high. Malnutrition is a known poor prognostic indicator for cancer treatment and has been shown to significantly impact survival and overall performance. Patients that are nutritionally optimized preoperatively not only rate their quality of life as better than those that are nutritionally depleted but they have better postoperative outcomes. BMI >25 preoperatively has also been associated with improved swallowing, longer time to disease recurrence and improved survival.

Therefore, for a certain subset of head and neck cancer patients pre-operative G-tube placement is an important consideration in comprehensive treatment planning.

METHODS AND MATERIALS

A retrospective review of head and neck cancer patient charts from the Wake Forest Baptist Health Otolaryngology Head and Neck Oncology clinic was performed between 2007-2012. The eligibility criteria included: patients aged 18 or over, who underwent head and neck cancer resection (unrelated to prophylactic G-tube placement prior to adjuvant therapy). Exclusionary criteria included: patients with G-tubes present pre-operatively, patients that had previously undergone surgical resection for treatment of a primary cancer; patients that solely underwent resection of neck nodal disease without primary site resection; patients undergoing resection of head and neck cancer originating in sites other than the upper aerodigestive tract, e.g., skin, parotid, thyroid; and patients with insufficient pre-operative history and that expired prior to their first pre-operative visit.

RESULTS

570 patients met inclusion criteria. 130 (23%) required post-operative G-tube placement.

CONCLUSIONS

Studies have suggested that advanced tumors (Stage 3-4), and most consistently those of the hypopharynx, oral cavity and oropharynx are most likely to require G-tubes. Our findings were concordant with these findings except that we did not find a significant relationship between hypopharyngeal tumors and G-tube placement, other than in the setting of laryngopharyngectomy. We also found that larger tumors (ie T3-T4) were more likely to get postoperative G-tubes which makes sense in the context of the volume of tissue excised with larger tumors and the need for a larger and potentially more bulky reconstruction.

DISCUSSION

Nodal disease was found to be a significant predictor however the laterality of nodal disease was not. N2 disease was found to be more strongly associated than N1 disease however bilateral disease was not significantly different than unilateral disease. These findings are in agreement with the predictive model put forth by Wermter et al. Performing a bilateral neck dissection was predictive of post-operative G-tube placement. Bilateral neck dissections are performed in the setting of NO neck disease in high risk patients and in almost all cases, patients with clinical evidence of nodal disease will get neck dissections. This suggests that it is the surgery itself that drives the association with G-tube placement, not clinical node status.

Reconstruction type, though it is a significant part of surgical planning, has not been assessed as a predictor for G-tube placement in prior studies. Our findings, that microvascular free flap and pedicled rotation flaps, are most predictive of G-tube placement is likely because of the bulk associated with the reconstruction. Similarly, due to the changes in anatomy and added bulk along the aerodigestive tracts, tracheotomy is often performed. Tracheotomy placement at the time of resection is associated with G-tube placement however given that tracheotomy has not been found to hinder swallow, it can be deduced that this association is driven by other parts of the resection.

CONCLUSIONS

Low pre-operative weight and BMI has previously been associated with poor outcomes and poor quality of life scores. One study found that a total weight loss of ≥ 20% was significantly correlated with treatment interruption, post-operative infections, early mortality, and hospital re-admission rate after treatment completion. Weight loss as low as 5% can alter important, measurable physiological parameters such as immune response, lung and cardiac function tests and autonomic autoregulation. G-tubes have in the past been found to prevent weight loss during treatment therefore their placement has value in certain patients. In this study we were able to replicate these findings that pre-operative weight loss and low weight and BMI were predictive of more complicated post-operative outcomes, such as G-tube placement.

REFERENCES