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Objectives

Compare the presence and degree of postoperative xerostomia following preservation or excision of the submandibular gland (SMG) during level IB neck dissection (ND) in patients who did not subsequently undergo radiation.

Study Design

Retrospective review with patient questionnaire.

Methods

The following three groups of patients were enrolled in the study for an xerostomia assessment: 1) patients with pT1-2N0 oral or oropharyngeal squamous cell carcinoma who underwent primary site resection and ND with SMG preservation without post-operative external beam radiation from November 2011 to March 2015; 2) a clinicopathologically matched group of patients who underwent SMG excision; 3) another demographically matched control group who presented to the head and neck oncologic surgery clinic and were managed without a level 1B ND. The 3 groups of patients were administered three questionnaires: University of Michigan Xerostomia Quality of Life (XeQoL), Short Form-8 (SF-8), and a xerostomia severity scale (XSS) from 0-10. We assessed the statistical differences between the SMG preservation and excision groups and between the two experimental groups together and the control group.

Two-tailed Mann-Whitney U tests performed to compare SF-8 and XeQoL questionnaire responses. Fisher's exact test used compare XSS scores. Two-tailed student's t-tests calculated to compare between the severity scores reported by subjects who reported some degree of dry mouth.

Experimental groups compared via aforementioned tests and also individually compared to control. The experimental groups' data were also summed and compared to the control group in a similar fashion.

Results

Table 1: Subject Demographics

	Preservation	Excision	Control
Demographics			
<i>n</i>	16	15	15
Age (yrs)	63.4	63.3	62.1
Male	87.5%	66.7%	66.7%
Smoker	3 (18.8%)	2 (13.3%)	3 (20.0%)
Srg-Svy Time (mos)	17.3	25.9	5.7
SCC Location			
Oral tongue	50.0%	80.0%	
Floor of mouth	6.3%	-	
Hard/soft palate	6.3%	-	
Sup alveolar ridge	6.3%	-	
Inf alveolar ridge	-	13.3%	
Tonsil	18.8%	-	
Base of tongue	6.3%	6.7%	
Epiglottis	6.3%	-	
Path Staging			
T1	68.8%	73.3%	
T2	31.3%	20.0%	
N0	81.3%	86.7%	
N1	6.3%	6.7%	
N2	12.5%	6.7%	

Table 2: Survey Results

	Preservation		Excision		Control	
	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
<i>n</i>	16		15		15	
XeQoL	1.22	0.46	1.21	0.30	1.02	0.06
SF-8	1.89	0.71	1.68	0.54	1.93	0.58
XSS	1.44	2.00	2.13	2.78	0.13	0.50
DMS	2.88	1.96	4.57	2.32	2.00	-

Complications included 2 seromas and 2 marginal mandibular nerve weaknesses (one in each experimental group). No patients in SMG preservation or SMG excision group developed local recurrences in level IB in the follow up period. All 3 patients with N2 nodal disease were offered and refused adjuvant radiation.

Table 3: Survey Results Comparison

	Preservation vs. Excision	Preservation vs. Control	Excision vs. Control	Preservation & Excision vs. Control
XeQoL	1.22 vs. 1.21 <i>p</i> =0.54	1.22 vs. 1.02 <i>p</i> =0.21	1.21 vs. 1.02 <i>p</i> =0.047	1.21 vs. 1.02 <i>p</i> =0.06
SF-8	1.89 vs. 1.68 <i>p</i> =0.48	1.89 vs. 1.93 <i>p</i> =0.83	1.68 vs. 1.93 <i>p</i> =0.29	1.79 vs. 1.93 <i>p</i> =0.46
XSS	1.44 vs. 2.13 <i>p</i> =0.79	1.44 vs. 0.13 <i>p</i> =0.039	2.13 vs. 0.13 <i>p</i> =0.054	1.77 vs. 0.13 <i>p</i> =0.020
DMS	2.88 vs. 4.57 <i>p</i> =0.22			

Conclusions

Oral or oropharyngeal resection itself with ND may result in the perception of xerostomia like sensation. SMG preservation does not appear in this study to reduce xerostomia. Further prospective study of the impact of SMG preservation and excision during ND is warranted.

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