13 - Title: Comparing Complications of Sentinel Lymph Node Biopsy vs. Elective Neck Dissection in Early-stage Oral Cavity Cancer Patients: A NSQIP Database Analysis

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Background**:** Elective neck dissection (END) and sentinel lymph node biopsy (SLNB) are treatment options for early-stage oral cavity cancer that demonstrate equivalent survival outcomes. However, there is growing evidence to suggest that END may result in higher morbidity and lower quality-of-life when compared to SLNB. Using a national database, we sought to further investigate this difference in outcomes between END and SLNB in early-stage oral cavity cancer patients.

Methods/Research Design: The National Surgical Quality Improvement Program (NSQIP) is a database that was created with the intent of improving procedural quality and safety in the United States. NSQIP datasets from the years 2005-2021 were queried to create a cohort of patients for our study. Adults having early-stage oral cavity cancer, as defined by appropriate ICD-9 or ICD-10 codes, were included in the cohort and then sorted into groups based on whether they had undergone either SLNB or END, as defined by appropriate CPT codes. Patients who had early-stage oral cavity cancer and underwent regional/free/local flap reconstruction, as defined by appropriate CPT codes, were excluded. Patients who underwent both END and SLNB were excluded as well (n=3). The two groups were queried for 17 different complications tracked by NSQIP as well as length of hospital stay. The rate of complications and length of hospital stay was then compared between the study groups. All data organization and analysis was performed using IBM SPSS Statistics Version 29.0.2.0 (20).

Results (or Preliminary Results, as applicable for a project in progress)**:** 2,550 patients met our study criteria, of which 26 had undergone SLNB and 2,524 had undergone END. There were no complications recorded in the SLNB group. Of the 677 complications that occurred in the END group, 215 (31.8%) were surgical site infections (superficial/deep incisional/organ space infections or wound dehiscence), 178 (26.2%) were pulmonary in nature (pneumonia, pulmonary embolism, unplanned reintubation, on ventilator >48 hours), 6 (0.9%) were acute renal failure, 21 (3.1%) were urinary tract infection, 46 (6.8%) were cardiovascular in nature (stroke, cardiac arrest requiring CPR, myocardial infarction), 156 (23%) were episodes of bleeding requiring transfusion, 14 (2.1%) were deep vein thrombosis/thrombophlebitis, and 41 (6.1%) were sepsis/septic shock. There were 20 deaths in the END group (0.8%). In the END group, 434 patients (17.2%) had at least one postoperative complication while none in the SLNB group did. There was a statistically significant association between type of treatment (END or SLNB) and whether there was at least one postoperative complication ($p=0.02$). When examining postoperative length of hospital stay (LOS), the SLNB group had a median of 0 days (interquartile range (IQR)=1) while the END group had a median of 3 days (IQR=5). There was a significant difference in LOS between the groups (U statistic=57,667; $p<0.001$).

Conclusion (or Preliminary Conclusion, as applicable for a project in progress)**:** In the NSQIP database, no patients who underwent SLNB for early-stage oral cavity cancer had complications while 17.2% of those who underwent END had at least one complication—a difference that was statistically significant. LOS was also significantly longer for END patients when compared to SLNB patients. Future research regarding disparities in outcomes between SLNB and END for early-stage oral cavity cancer can help guide physicians and patients when making decisions about treatment.