Comparing final pathology of tongue cancer lesions to the preliminary pathology report

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Objectives: Oral cancer is a disease that is often managed by surgery, or in conjunction with radiation and chemotherapy. The most common location for oral cancer is the tongue. Treatment decisions are often based on the size of the tumor; however, when the tumor is less than 2cm, and with a thickness < 5mm, the decision to perform a sampling of the draining lymphatics of the neck is less clear. Options to evaluate the neck include observation, sentinel lymph node biopsy, or elective neck dissection. Often, the decision to perform neck surgery on the T1 lesion patient is elective and based on the depth of invasion (DOI) as measured on the biopsy specimen. There are limited studies to show the predictive value of biopsy depth of invasion on the final pathology DOI for classification of the lesion. This study aims to determine the accuracy of biopsy depth of invasion for treatment planning of patients with squamous cell carcinomas (SCC).

Experimental Methods: We performed a retrospective chart review of 133 tongue cancers treated in the University of Texas Oral and Maxillofacial Surgery from 2013 to 2023 and identified 44 T1 lesions. Of the 44 T1s, there are 21 (48%) males and 23 (52%) females. Upon review, 37 T1 patients met the criteria, and 7 were incomplete. Of the 37 biopsy-proven SCC T1s,16 (43%) remained in the same stage and diagnosis, 13 (35%) had high-grade dysplasia, and 8 (22%) upstaged to T2 and T3.

Results: We found there is no statistically significant relationship between biopsy DOI and final pathology DOI, $p=0.000678$ for differences being nonzero. Upstaging was statistically explained by differences in differences in DOI, $p=3.75e-8$.

Conclusion: Surgeons base treatment on DOI, so predictions must be accurate to continue using biopsy to plan treatments. According to the results, the DOI is not significantly accurate to surgery DOI, therefore other considerations must be taken into account to plan treatments. Further studies must be done comparing biopsy DOI to surgery DOI.