Introduction

Oral tongue squamous cell carcinoma (OTSCC) is characterized by local invasiveness and high propensity to lymph node metastasis due to the oral tongue’s rich lymphatic drainage. The presence of cervical metastasis is considered to be among the most important prognostic factors with an associated 5-fold increase mortality.

There is currently great controversy regarding the management of early stage cancers of the oral tongue (Stage I and II). For those stages, the risk of occult metastasis is approximately 25%. Due this relative high number, many centers favour elective neck dissection in all cN0 patients. This policy however results in overtreatment of 75% of the patients, with associated morbidity and unnecessary costs. The aim of this study was to evaluate the predictive value of various clinicopathological factors which may affect the risk of lymph node metastasis in OTSCC and establish a tumor thickness cut-off value predicting cervical node metastasis to indicate the role of elective neck dissection in the management of oral tongue carcinoma.

Methods and Materials

After IRB approval, we included all OTSCC patients between January 2001 and January 2013. The medical records were examined retrospectively to obtain detailed demographic data on age, gender, smoking and drinking habits, clinical and pathological TNM, clinical stage, postop tumor thickness, locoregional recurrence and distant metastasis.

For comparison of means, the t-test was used. Binary variables were associated in contingency tables using the two-sided Fisher exact test. Odds ratio (OR) and 95% confidence interval (95% CI) were calculated also using two-by-two tables, according to the Mantel-Haenszel method. A multivariate binary logistic regression model was used to investigate the effect of several variables on nodal metastasis. Survival probabilities were estimated according to the Kaplan–Meier method. The log-rank test was applied to assess the significance of differences among actuarial survival curves with a 95% confidence interval.

Results

The median age was 66 years (range 28-92). There were 50 females (43.1%) and 66 (66.9%) males. Alcohol consumption was reported in 42.2%. 37.2% of patients were never smoker, 35.1% former smoker and 27.7% current smoker. The mean reported cumulative cigarette consumption was 31.4 (±S.E. 2.4) pack-years. Clinically negative necks turned out pathologically positive in 23.4% patients. Locoregional recurrence was reported in 22.6% of the patients, while 13.6% of them suffered disease-specific death. Overall, 18.1% died of any cause in this cohort.

The relative percentage of T, N and M category are shown in Table 1. Positive nodal disease was reported in 41.2%. The frequency of positive nodal disease for each T category is shown in Figure 2.

Table 1: Shows the Clinical predictors in the multivariate analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted OR (95%CI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>NA</td>
<td>1.000</td>
</tr>
<tr>
<td>Age</td>
<td>1.06 (1.00-1.12)</td>
<td>0.045</td>
</tr>
<tr>
<td>T category</td>
<td>2.01 (0.99-4.11)</td>
<td>0.051</td>
</tr>
<tr>
<td>Smoking status</td>
<td>0.52 (0.27-1.00)</td>
<td>0.050</td>
</tr>
<tr>
<td>Drinking status</td>
<td>0.99 (0.52-1.90)</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Discussion

Cervical lymph node metastasis has proven to be one of the most important prognostic factors in OTSCC, thus making it very important to manage the neck appropriately (Gantry et al.). The rate of clinically occult metastasis, depending on studies population and imaging modalities, can range for early-stage OTSCC from 18% to 53%. Evidence from prospective trials failed to prove that elective neck dissection was superior to close observation. It seems that strict surveillance allows for effective salvage and results in similar disease specific survival. This may simply reinforce that the success of a strategy of observation relies on adequate follow-up to detect recurrences but most importantly depends on the effectiveness of salvage surgery. There is currently great variability among authors in the reported thickness cut-off above which elective neck dissection would be recommended, with values ranging from 1.5 mm to 10 mm. Although postoperative tumor thickness may be useful in predicting nodal metastasis, it may be of limited clinical utility since decisions regarding the management of the neck would be delayed and treatment of the neck would require an additional surgery. Ideally, tumor thickness should guide management and allow surgeons to address the primary cancer as well as the neck in one surgery. The use of frozen sections for intraoperative assessment of tumor thickness may be further evaluated. Other non-invasive technologies allowing preoperative tumor thickness measurement are also being evaluated.

Conclusions

The measurement of tumor thickness may represent an additional decision tool in the management of clinically negative neck in OTSCC. Histological tumor thickness has proven to be an accurate predictor of lymph-node metastasis and could thus safely indicate whether the neck should be addressed or not. Further work is required to define meaningful cut-off for each anatomical site and subsite.

References