Evaluating the Number of Pathologic Lymph Nodes In Oral Cavity Cancer

Zina M. Ahmed, MSII, Sukh Aulakh, BS, Roberto N Solis, MD, Silvea Bastea BS, Andrew C. Birkeland, MD
University of California, Davis

Introduction

The epidemiology of head and neck squamous cell carcinoma (HNSCC) has been shifting with an increase in incidence of HPV-associated oropharyngeal HNSCC, which behaves less aggressively than HPV-negative HNSCC. This has prompted a paradigm shift in the newly released 8th edition American Joint Committee on Cancer (AJCC) staging guidelines for HPV-associated HNSCC pathologic nodal classification (counting positive lymph nodes), while HPV-negative HNSCC nodal staging has been largely unchanged from the 7th edition. This study aims to evaluate whether the pathologic number of lymph nodes is associated with oncologic outcomes in patients diagnosed with oral cavity HNSCC.

Methods

A retrospective case series study was performed that includes patients diagnosed with oral cavity HNSCC who underwent resection with concurrent neck dissection between 2004-2020. The primary outcomes were 5-year overall survival (OS), disease specific survival (DSS), and disease-free survival (DFS) to evaluate pathologic nodes using the 8th edition AJCC nodal staging used for HPV-associated HNSCC.

Figure 1. Distribution of pathological lymph nodes in patients

Results

Of 161 patients identified, 88 had 0 positive lymph nodes, 60 had 1-4 positive lymph nodes, and 13 had more than 4 positive lymph nodes (figure 1). Using the 8th edition AJCC pathologic nodal staging system showed a difference between the groups for DSS (p=0.047) and DFS (p=0.005) but not for OS (p=0.053) (table 2).

Table 2. Oncologic outcomes based on number of pathologic lymph nodes

<table>
<thead>
<tr>
<th>P-value</th>
<th>0</th>
<th>1-4</th>
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<tbody>
<tr>
<td>DFS (%)</td>
<td>0.005</td>
<td>68</td>
<td>40</td>
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<tr>
<td>OS (%)</td>
<td>0.053</td>
<td>79</td>
<td>42</td>
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<tr>
<td>DSS (%)</td>
<td>0.047</td>
<td>81</td>
<td>47</td>
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Discussion

Applying the 8th edition AJCC pathologic nodal staging system for HPV-associated oropharyngeal HNSCC to oral cavity HNSCC can be valuable for prognostication. The statistically significant differences noted by the DSS and DFS support this conclusion.

Future direction:
- Increasing number of patients
- Comparing number of pathologic lymph nodes and oncologic outcomes to the current staging system and control for variables
- Applying a statistical model to identify which staging system is better to discriminate between oncologic outcomes

AJCC 8th Edition Nodal Staging HPV-Negative

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<th>No Regional Lymph Node Metastasis</th>
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<th>No Metastasis in a Single Ipsilateral Lymph Node, &gt;3 cm but ≤6 cm and ENE (−)</th>
<th>No Metastasis in Multiple Ipsilateral Lymph Node(s), ≥6 cm and ENE (−)</th>
<th>Metastasis in Any Node(s) With Clinically Overt ENE (−)</th>
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<td>Metastasis in multiple ipsilateral nodes, ≥6 cm and ENE (−)</td>
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<td>Metastasis in bilateral or contralateral lymph node(s), ≤6 cm</td>
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AJCC 8th Edition Nodal Staging HPV-Positive

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References: