Analysis of Single Ipsilateral Cervical Nodes in Advanced Cancer of the Pyriform Sinus

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INTRODUCTION

Hypopharyngeal squamous cell carcinoma is usually poorly differentiated and asymptomatic in early stages resulting in an astounding 70% initiating with stage III disease. HPSSC has a high recurrence rate of 19-35% following surgical intervention yielding one of the poorest survival rates among squamous cell carcinomas arising in the head and neck. Reoccurrence in the neck following definitive neck dissection indicates a grave prognosis for these patients, because they are often not amenable to salvage treatment. The survival rate of these patients is only 19.2 percent at five years.

While previous studies describing micro-serval sectioning of lymph nodes in the assessment of metastatic disease in patients with HPSSC are readily available, these studies have been limited to microscopic examination of lymph nodes identified by palpation and visual inspection. To our knowledge, the incidence and patterns of small metastatic nodes or micrometastases have not been reported.

We demonstrate that micro serial sectioning of the whole neck specimens prepared at a thickness of 5 μm followed by hemotoxylin and eosin staining results in a more accurate assessment of metastatic diseases and in particular, micrometastases.

METHODS AND MATERIALS

30 consecutive patients with primary HPSSC undergoing primary tumor resection and neck dissection at a single institution between April 2005 and March 2011 formed the basis of this study. Tumors were staged according to the 2002 American Joint Committee on Cancer/Union Internationale Contre le Cancer (AJCC/UICC) criteria. 26 patients were male and four were female with a mean age of 63 years (SD 8.9 years, range 42–79 years). All patients had a T3 or T4 primary HPSSC of the pyriform sinus with fixation of the hemilarynx, and a single positive ipsilateral node of the neck (N1 or N2a). Patients with tumors extending into the post cricoid region and patients with a prior history of head and neck cancer, surgery, chemotherapy or radiation therapy were excluded. Additionally, all patients included in the study were deemed by our institute’s multidisciplinary tumor board to be candidates for surgical intervention with curative intent. Each patient underwent laryngopharyngectomy and bilateral neck dissection with immediate reconstruction of the laryngopharynx and bilateral neck dissection at a single institution between April 2005 and March 2011.

A thorough and meticulous neck dissection is absolutely critical because recurrent disease usually not amenable to salvage surgery. While histological assessment by serial sectioning is definitely among the most accurate methods available for detecting small metastatic nodes and micrometastatic deposits due to sampling error. When the sample was delivered to the pathologist, lymph nodes were evaluated based on an examination of two to three sections from each node. The large interval between sections easily allows small metastatic nodes with diameters <2-mm to escape detection. Unfortunately, all histological evaluation of lymph nodes is subject to sampling error. When the sample was delivered to the pathologist, lymph nodes were evaluated based on an examination of two to three sections from each node. The large interval between sections easily allows small metastatic nodes with diameters <2-mm to escape detection.