Feasibility of sparing the submandibular gland in level I neck dissection for squamous cell carcinoma of the head and neck

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ABSTRACT

OBJECTIVES: To determine the rate of cancerous involvement of the SMG in patients with SCC of the head and neck and to understand that sparing the SMG in level I neck dissection may be feasible in select patients.

STUDY DESIGN: Retrospective chart review

METHODS: A retrospective chart review from 2003-2013 of all patients with SCC of the head and neck who underwent a neck dissection at a tertiary medical center.

RESULTS: 505 patient charts were reviewed. 331 neck dissections that included level I as well as SMG pathology results were included in the study. The mean age was 62 years old with a male to female ratio of 2.6:1. Fifty-four (16.3%) of cases had level one disease. SMG involvement was found in 6 of the 331 cases (0.18%) with 1 (0.03%) glands revealing cancerous metastasis within the gland itself.

CONCLUSIONS: Involvement of the SMG in primary SCC of the head and neck is extremely rare. When the gland is involved, it is as a result of direct extension from the primary tumor or neighboring lymph nodes rather than metastasis. If the tumor is not contiguous with the gland, it is unlikely that the gland will harbor metastasis. Therefore, preservation of the SMG during level I neck dissection in these cases is a feasible option.

INTRODUCTION

The surgical treatment for many head and neck squamous cell carcinomas is the excision of the primary lesion in addition to a selective neck dissection. This protocol often includes the removal of the contents of level I. Level I is defined as the submandibular triangle bordered by the anterior and posterior belly of the digastric, the stylohyoid, the body of the mandible and the submandibular gland. From our experience, the involvement of the submandibular gland in metastatic disease from SCC is rare and the morbidity from removal of the gland is high. The aim of this study is to identify the rate of metastasis to the submandibular gland in SCC of the head and neck and report if it is indeed feasible to spare the SMG when performing a level I neck dissection.

METHODS

A retrospective chart review from 2003-2013 of all patients with SCC of the head and neck who underwent a neck dissection at a tertiary medical center. Included in this study was patients greater than 18 years of age, histopathologically confirmed SCC and a neck dissection performed that included level I. Exclusion criteria included a history of prior radiation or if the SMG was spared or not sent for pathology during the procedure. Data collected included patient demographics, primary tumor location, TNM stage, bony invasion, type of surgery, date of surgery, number of positive lymph nodes collected from level I, SMG pathology, length of follow up, vital status, local and regional recurrence, distance recurrence, and presence of second primary. SMG pathology will further be designated as direct extension from primary tumor, invasion from adjacent LN, and metastasis from hematogenous spread.

RESULTS

505 patient charts were reviewed. 331 neck dissections that included level I as well as SMG pathology results were included in the study. The mean age was 62 years old with a male to female ratio of 2.6:1. Fifty-four (16.3%) of cases had level one disease. SMG involvement was found in 6 of the 331 cases (0.18%) with 1 (0.03%) glands revealing cancerous metastasis within the gland itself.

Total # neck reviewed 505
Neck dissections including level lb 331
Mean age 62
Male:Female 2.6:1
SMG involvement 6/331 (0.18%)
SMG metastasis 1/331 (0.003%)

DISCUSSION

Involvement of the SMG in primary SCC of the head and neck is extremely rare. When the gland is involved, it is a result of direct extension from the primary tumor or neighboring lymph nodes rather than metastasis. If the tumor is not contiguous with the gland, it is unlikely that the gland will harbor metastasis. Therefore, preservation of the SMG during level I neck dissection in these cases is a feasible option.

RESOURCES