

Metastatic Cancer to the Larynx: A Case Report and Update

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Summary: Objective. The aim of this study was to describe a case of colorectal carcinoma metastatic to the larynx and provide a review of the current literature.

Methods. A case report with chart review was performed. A review of the current literature was performed by systematically searching PubMed, OVID, CINAHL Plus, and EMBASE.

Results. In 1988, a comprehensive literature review identified melanoma as the most common neoplasm to exhibit laryngeal involvement. Since that study, 41 subsequent cases have been reported, and among these, colorectal adenocarcinoma was the most frequent distant primary (24%). In 25 (58%) cases, curative surgery was attempted, but only 4 patients remained disease-free at last follow up. We report the history of a 52-year-old man who presented with rectal adenocarcinoma metastatic to his larynx 4 years after definitive treatment of the primary site.

Conclusions. In patients with a laryngeal mass and a history of colorectal cancer, or those at high risk of having an occult colorectal primary, metastatic spread to the larynx must always be considered. Although secondary laryngeal metastasis portends a poor prognosis, for the select patient, surgical intervention can provide long-term disease control.

Key Words: Laryngeal cancer–Metastasis–Dysphonia–Colorectal–Voice.

INTRODUCTION

Direct extension to the larynx from hypopharyngeal¹ or thyroid² primary neoplasms, as well as laryngeal involvement of disseminated hematopoietic malignancies, is well described.³ Metastatic spread to the larynx from distant primaries, however, is less common. Nevertheless, such secondary involvement of the larynx must always be considered to avoid delay in diagnosis. These metastatic deposits are occasionally treatable and may also lead to early discovery of an occult distant primary. In 1987, Ferlito et al,⁴ reviewed the world literature and reported on 120 cases of metastatic involvement of the larynx. The most common distant primaries were cutaneous melanoma and renal cell carcinoma. The prognosis was generally poor, but a few 5-year survivors were reported. The purpose of this study is to provide a current update on metastatic involvement of the larynx, including the most common sites of distant primary malignancies, as well as current treatment and prognosis.

CASE REPORT

In February 2010, a 52-year-old man underwent neoadjuvant treatment with capecitabine and radiation therapy followed by abdominoperineal resection for a T3N2aM0 rectal adenocarcinoma. He was treated postoperatively with 12 cycles of adjuvant FOLFOX (oxaliplatin and 5-fluorouracil). He did well medically until June 2014, when he presented with gait disturbance, nausea, and headache. Imaging revealed a cerebellar lesion with a mass effect, as well as right and left upper lobe lung lesions and a large erosive sacral mass suspicious for local recurrent

disease. He underwent decompressive posterior fossa craniotomy and gross total resection of his cerebellar lesion. Final pathology was consistent with metastatic colorectal adenocarcinoma. He subsequently underwent whole brain radiation and was started on systemic chemotherapy, again with FOLFOX. In August 2014, he presented to the voice clinic after a recent positron emission tomography/computed tomography (PET-CT) demonstrated incidental uptake in the left paraglottic space involving the arytenoid and cricoid cartilages suspicious for a second primary malignancy. Dedicated contrast-enhanced neck CT showed invasion and destruction of the cricoid cartilage (Figure 1). Videostrobolaryngoscopy demonstrated symmetric full movement of both vocal folds with no obvious endolaryngeal mass lesion. He was subsequently taken to the operating room where a direct laryngoscopy and esophagoscopy showed no mucosal abnormalities. A neck exploration was performed, which revealed a smooth, isolated mass invading the cricoid cartilage and thyrohyoid muscle. A biopsy was taken, and final pathology demonstrated adenocarcinoma consistent with his previous rectal primary (Figure 2). He was continued on palliative chemotherapy until he developed a breathy dysphonia with left true vocal fold paralysis and increased size of the mass on imaging. He was started on external beam radiation and underwent 3 days of treatment until he developed stridor and subsequent bilateral true vocal fold immobility with airway obstruction leading to the need for tracheotomy. He is still receiving palliative chemoradiotherapy and doing well.

DISCUSSION

Overt metastatic involvement of the larynx from a distant primary neoplasm is an infrequent occurrence. Subclinical involvement may be much more common, especially for particular primary sites and tumor types. Prescher et al⁵ examined six larynges at autopsy in patients with prostate cancer and found subclinical disease in all specimens. Horny and Kaiserling³ reviewed 14 patients with systemic hematopoietic malignancies and found laryngeal involvement in 10 specimens. Nonetheless, symptomatic

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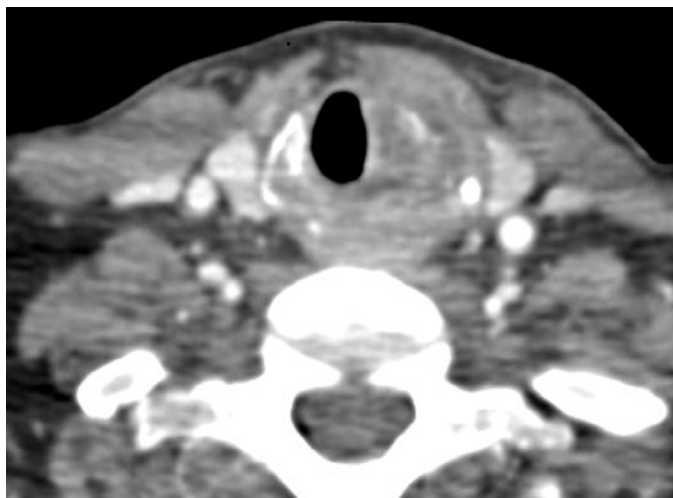


FIGURE 1. Metastatic rectal adenocarcinoma eroding the cricoid cartilage.

metastatic disease to the larynx from a distant primary can result in rapidly progressive airway compromise and early detection can lead to locoregional control.

A review of the English-language literature identified 41 cases of secondary laryngeal involvement from distant primary neoplasms published since the review of Ferlito et al in 1987. The most common primary cancer reported was colorectal adenocarcinoma, followed by renal and prostate primaries (Table 1). The median age was 59 years (range is 29–82 years) and 68% were men. Of the patients, 66% presented with dysphonia as their primary complaint. Twenty-seven percent were found to have

TABLE 1.
Cases of Metastatic Spread to the Larynx From a Distant Primary Site Since 1988

Primary Site	Pathology	Number of Cases (n = 41)
Colorectal	Adenocarcinoma ⁶⁻¹⁴	10 (24%)
Renal	Renal cell carcinoma ¹⁵⁻²⁰	6 (15%)
Prostate	Small-cell neuroendocrine carcinoma; ²¹ adenocarcinoma ²²⁻²⁶	6 (15%)
Skin	Malignant melanoma ²⁷⁻³¹	5 (12%)
Lung	Adenocarcinoma ^{8,32,33}	3 (8%)
Lower extremity	Liposarcoma; ³⁴ osteosarcoma ^{35,36}	3 (8%)
Breast	Infiltrative ductal carcinoma ^{37,38}	2 (5%)
Thyroid	Papillary thyroid carcinoma ^{39,40}	2 (5%)
Uterus	Endometrioid adenocarcinoma ⁴¹	1 (2%)
Liver	Hepatocellular carcinoma ⁴²	1 (2%)
Sacrum	Chordoma ⁴³	1 (2%)
Ovary	Undifferentiated tumor ⁴⁴	1 (2%)

a vocal fold paralysis (VFP) with over half of these patients presenting as an isolated VFP without obvious mass lesion on laryngoscopy. Five patients (12%) presented with an asymptomatic neck mass found on physical examination. The most common laryngeal presentation was transglottic infiltration (39%)

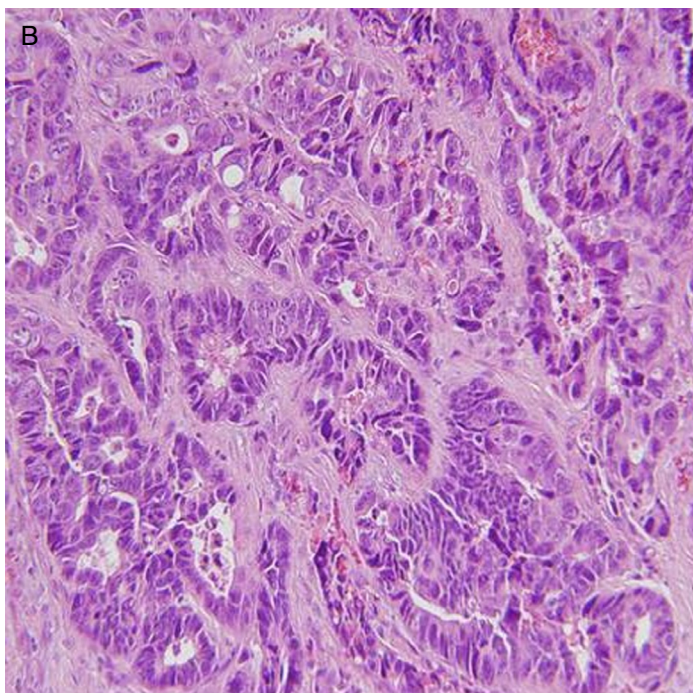
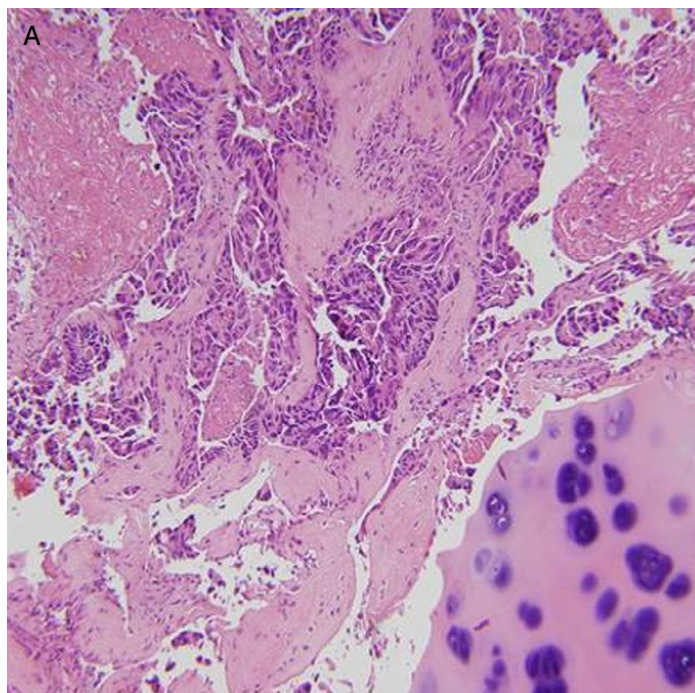


FIGURE 2. **A.** Hematoxylin and eosin section of the cricoid lesion showing poorly formed nests of tumor cells infiltrating the laryngeal stroma (100× magnification). **B.** Higher power showing atypical glands often filled with necrotic debris, characteristic of metastasis from colonic adenocarcinoma (hematoxylin and eosin, 200× magnification).

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