

# Isolated Solitary Metastatic Brain Lesion from Laryngeal Cancer in an Asymptomatic Patient

Geisinger

Ryan Hellums, DO<sup>1</sup>; Nicholas Purdy, DO; Andrew Conger, MD  
Geisinger Medical Center, Danville, PA

## Abstract

### Background:

Isolated intracranial metastatic disease in laryngeal cancer is a rare entity, with only 11 cases reported in the literature. All of these cases were discovered on workup for neurologic symptoms.

### Clinical presentation:

74 year old male presented with hoarseness and left neck mass diagnosed with cT3N2bM0 laryngeal SCC of left false cord. He completed primary chemoradiation with an unremarkable treatment course. On post-treatment PET/CT he showed good response to therapy at the primary site and within the neck, but was noted to have a large mass of the left posterior frontal lobe. No other distant metastatic disease was identified. MRI brain confirmed a solitary lesion within this region with no other intracranial disease. He was neurologically asymptomatic at the time of imaging. Patient then underwent neurosurgical resection and pathology was consistent with metastatic laryngeal cancer. He underwent stereotactic radiation to the surgical bed, as his post resection MRI revealed a small amount of enhancement. He remained disease free at 2 month follow up.

### Conclusion:

This case specifically highlights the importance of post treatment imaging in patients with laryngeal carcinoma, as disease can progress quickly without associated symptoms. The clinician must pay close attention for development of neurologic symptoms and consider neuroimaging when appropriate.

## Introduction

Intracranial metastatic disease is a rare entity in head and neck oncology. Laryngeal cancers have an even lower likelihood of intracranially metastasis, with a reported rate of 1.3%<sup>1</sup>.

## Case Presentation

A 74 year old male presented with hoarseness and left neck mass diagnosed with cT3N2bM0 laryngeal SCC of left false cord. He completed primary chemoradiation with an unremarkable treatment course. On post-treatment PET/CT he showed good response to therapy at the primary site and within the neck, but was noted to have a large mass of the left posterior frontal lobe. No other distant metastatic disease was identified. MRI brain confirmed a solitary lesion within this region with no other intracranial disease. He was neurologically asymptomatic at the time of imaging. Patient then underwent neurosurgical resection and pathology was consistent with metastatic laryngeal cancer. He underwent stereotactic radiation to the surgical bed, as his post resection MRI revealed a small amount of enhancement. He remained disease free at 2 month follow up.

## Imaging

Figure 1 shows an axial T1 weighted MRI with an enhancing lesion of the posterior left frontal lobe with associated vasogenic edema and a midline shift. Figure 2 shows the post resection MRI with continued enhancement near the surgical bed.

## Pathology

Figure 3 shows the surgical pathology from neurosurgical resection which reveals a metastatic lesion with squamous differentiation and intracellular bridging in a background of necrosis.

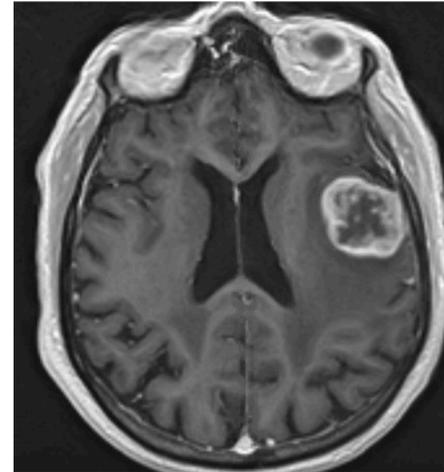


Figure 1. MRI T1 Axial

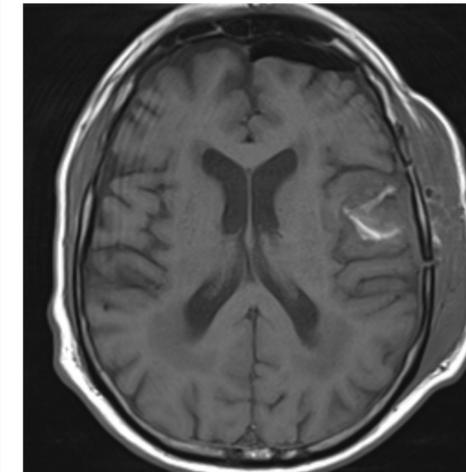


Figure 2. MRI T1 Axial

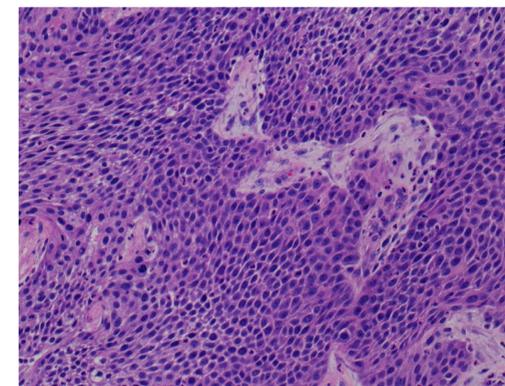
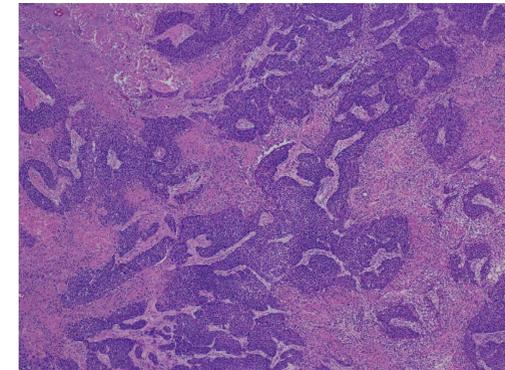


Figure 3. Pathology Slides

## Discussion

Intracranial metastatic disease from laryngeal cancer without other distant metastatic disease is a rare entity. Only 11 cases of isolated intracranial metastases have been reported in the literature<sup>2,3,4,5</sup>. Four of these reported cases have had metastatic deposits within the brain parenchyma, the remainder had metastases to the cavernous sinus, sella turcica, or leptomeningis<sup>2,3,4</sup>. Interestingly, these patients were discovered upon workup due to neurologic symptoms<sup>2,4,5</sup>. The patient we present was asymptomatic at the time of diagnosis, and the solitary brain mass was discovered on routine three month post treatment imaging.

Close surveillance both clinically and radiographically is of utmost importance in the head and neck cancer patient population. The recommended post treatment imaging modality is a PET/CT at a minimum of 12 weeks following completion of systemic therapy and radiation<sup>6</sup>. If intracranial lesions are identified on PET/CT or if clinical suspicion is high, MRI is the imaging modality of choice for further evaluation. MRI better identifies the presence, location, and number of intracranial metastatic lesions<sup>7</sup>.

This case specifically highlights the importance of post treatment imaging in patients with laryngeal carcinoma, as disease can progress quickly without associated symptoms. The clinician must pay close attention for development of neurologic symptoms and consider neuroimaging when appropriate. The overall prognosis for patients with intracranial metastasis is poor, however early detection can lead to decreased morbidity and mortality if intervention is quickly initiated.

## References

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