TIA symptoms reveal a carotid body paraganglioma

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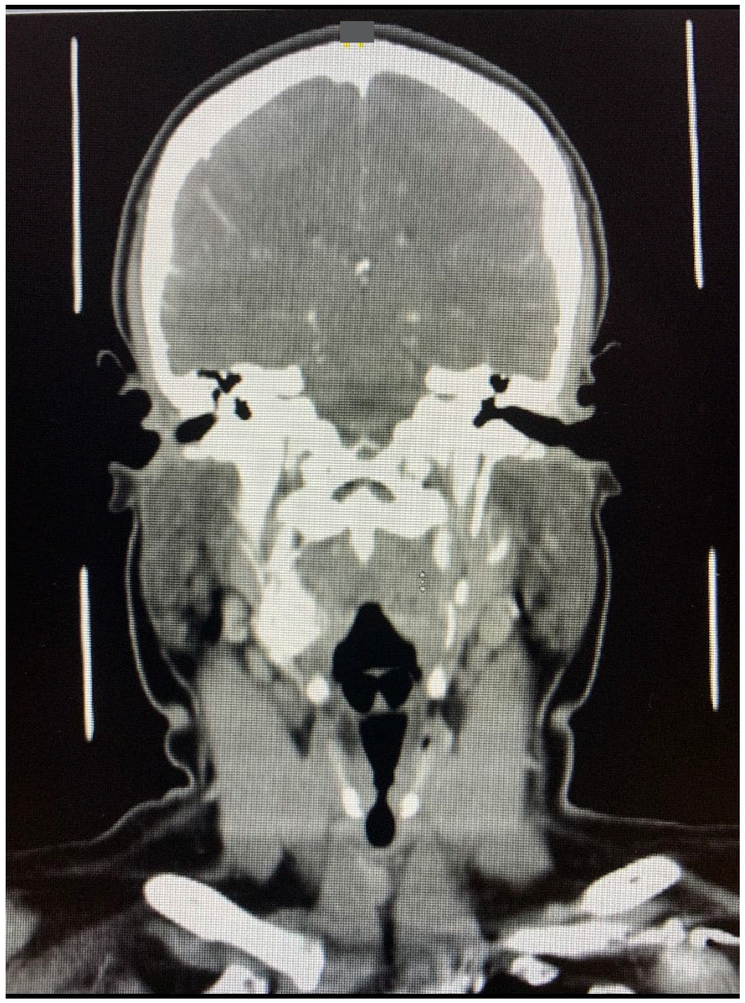
Introduction

Carotid body tumors are rare neuroendocrine neoplasms with an annual incidence of 1/100,000. We report a unique presentation of a carotid body tumor in a 34 year old female who presented as a stroke alert for left-sided body numbness.

CTA Head and Neck



Case Presentation

34 year old Caucasian female who presented to the ED with left side body numbness and tingling of one hour duration who was then stroke-alerted. Non contrast CT brain was negative for hemorrhage or infarction. However, CTA head and neck revealed an enhancing mass at the medial aspect of the right carotid bifurcation most likely representing a glomus tumor. Cervical MRI confirmed a paraganglioma displacing the carotid artery and internal jugular vein laterally. Patient also endorsed intermittent palpitations associated with flushing and diaphoresis. CT abdomen/pelvis and CT chest were performed to evaluate for metastatic disease and returned with no acute findings. The patient was discharged home and returned 3 months later for joint neurosurgery and vascular surgery tumor resection. She had an excellent recovery.

Discussion

A paraganglioma is a collection of extra-adrenal autonomic cells. They are highly vascular structures that originate from neuroendocrine cells, and can release catecholamines. They are related to pheochromocytomas and can occur in the abdomen, chest, or neck. Most parasympathetic paragangliomas that are located in the neck are non-functional. However, hypersecretory masses can present with increased sympathetic activity, including diaphoresis, tachycardia, and diaphoresis. When occurring in the carotid body they are known as carotid body tumors.

Carotid body tumors tend to present with symptoms of mass effect, which is consistent with our case. Once >3cm, treatment is generally recommended. In this case, the carotid body tumor was located along the carotid artery, causing compression of the carotid vasculature. Interestingly, our patient with a carotid body tumor endorsed symptoms of diaphoresis, night sweats and intermittent palpitations over the last few years. Despite lack of laboratory data to support coinciding pheochromocytoma, we observe that based on its location, the paraganglioma caused intermittent decreased cerebral perfusion, resulting in transient reversible neurological deficits over the last several years. The mass likely continued to grow in size and further compromised cerebral perfusion to such an extent that it caused the patient to present as a stroke alert for left-sided deficits.

Options for management include surgical resection or radiation therapy. In general, resection is the preferred approach for localized symptomatic paragangliomas and for all catecholamine-secreting paragangliomas arising at any site. Less invasive approaches, such as conventionally fractionated external beam radiation therapy, may provide high rates of long-term disease control for head and neck paragangliomas or for non-head and neck paragangliomas that are unresectable, but they do not offer the same degree of symptom relief that is accomplished with resection.s

This case illustrates the potential unique presentation of a carotid body tumor. Paraganglioma is not typically on the differential for a patient presenting with stroke like symptoms. We present an interesting and rare case of a carotid body tumor intermittently limiting cerebral perfusion causing stroke like symptoms. Including paraganglioma in the differential diagnosis of transient unilateral neurological symptoms can aid in improving the diagnosis and management of carotid body tumors.

References

- 1. Pathology and Genetics of Tumours of the Endocrine Organs. WHO Classification of Tumours, DeLellis RA, Lloyd RV, Heitz PU, Eng C (Eds), IARC press, Lyon, France 2004.
- 2. Neumann HPH, Young WF Jr, Eng C. Pheochromocytoma and Paraganglioma. N Engl J Med 2019; 381:552.

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