HYPOGLOSSAL SCHWANNOMA AT THE CAROTID BIFURCATION: A RARE FIND

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Introduction

Objective: We seek to share an entity rarely described in the literature, encountered in the case of a schwannoma adherent to the hypoglossal nerve along its descent from the skull base to the carotid bifurcation.

Background: In the head and neck, schwannomas are found to develop along any nerve encased in Schwann cells. Approximately 40% of extracranial nerve schwannomas (HNS) have been identified in the literature, and only one HNS was encountered at the bifurcation of the carotid system in the neck.

Case Details: We present a 33-year-old woman who presented with a right-sided enlarging mobile neck mass. Preoperative imaging demonstrated a well-circumscribed T2 enhancing mass 37mm in greatest dimension with tumor mass effect causing near-total occlusion of the internal jugular vein and some degree of carotid system splay. Differential diagnosis prior to resection included paraganglioma, vagal nerve schwannoma, sympathetic nerve schwannoma, hypoglossal nerve schwannoma.

Due to interval growth and young age, the patient elected for surgical removal of the mass. Intraoperatively, a large vascular mass was identified at the carotid bifurcation. The mass was found to be circumferentially enveloping the hypoglossal nerve. Critical nearby structures were carefully dissected away and the mass was isolated to its apparent endpoint at the skull base. The mass was tightly encircling the hypoglossal nerve the entire course from the carotid bifurcation to its departure at the cranial base. Due to its close association with the nerve, the mass was excised with a long segment of nerve.

Summary: Cervical HNS are rare, have many overlapping features with paragangliomas. Very rarely do cervical HNS span from the skull base down to the carotid bifurcation. Both can be managed with gross-total resection, and a thorough preoperative discussion is advisable.

Case Details:

- 33F relatively asymptomatic
- h/o remitting-relapsing multiple sclerosis, serial MRIs
- Discernable symptoms:
  • Neck discomfort
  • Mild dysphagia
  • Intermittent otalgia
  • Palpable neck mass
- Physical exam:
  • Level II mass
  • Mobile transverse (not cephalocaudal)
  • Cranial nerves II- XII intact
- Imaging:
  • MRI: 37mm x 18mm well-circumscribed mass
    • At carotid bifurcation
    • Some lateral splay of carotid system
    • “salt-and-pepper” (heterogenous)
  • Counseled initially re: paraganglioma
  • MRA: no distinct vascularity
- Operative findings:
  • Fleshy-colored vascular soft tissue mass
  • Situated at but separate from carotid bifurcation
- Pathology:
  • Benign schwannoma
  • Nerve margins clear of disease
- Postoperative Followup:
  • Hypoglossal palsy, good speech at 2mo and 4mo

Conclusions

- Cervical schwannomas arise from any nerve sheathed in Schwann cells. Cases describe involvement of cranial nerves as well as sympathetic chain.
- Differential diagnosis of a neck mass at the carotid bifurcation should include:
  - Schwannoma (vagal, hypoglossal, sympathetic)
  - Paraganglioma
- Schwannomas and paragangliomas in this region can share many similar historical, clinical, and radiographic findings and therefore one can easily masquerade as another.
- This knowledge should influence preoperative workup options as well as preoperative discussions regarding treatment options and risks of potential deficits from surgical management.
- The occurrence of a hypoglossal nerve schwannoma that is both extracranial and situated at the carotid bifurcation is an exceedingly rare event.
- Complete removal with or without neurorrhaphy should be offered as a sound approach to definitive treatment.

References