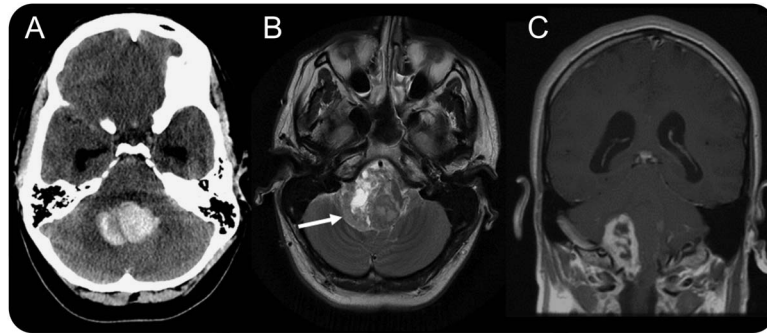


Teaching NeuroImages: Large vagal nerve schwannoma presenting with hemorrhage and respiratory failure

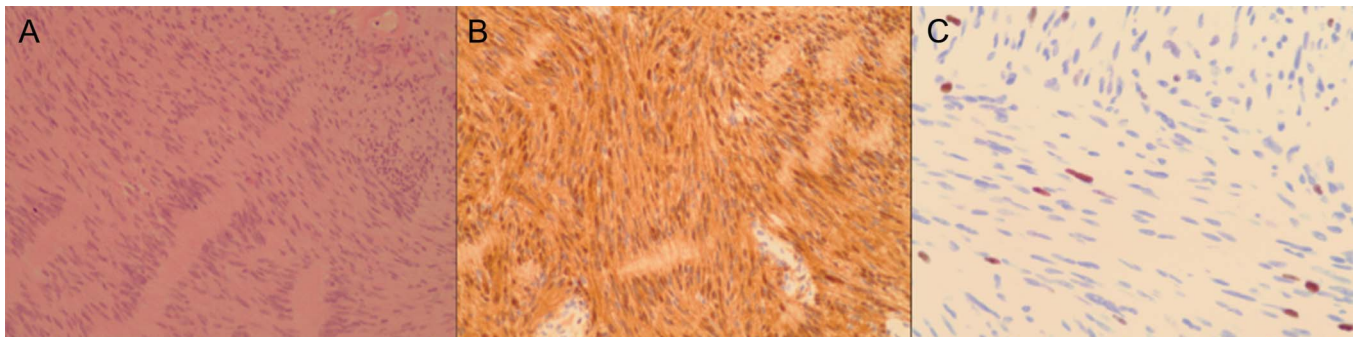
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Figure 1 Intracranial vagal schwannoma with intratumoral hemorrhage



Axial CT of the head shows acute hemorrhage at the foramen magnum on the right extending to the fourth ventricle (A). T2-weighted axial MRI shows a heterogeneous extra-axial mass (arrow) with significant mass effect on the adjacent medulla and hematoma extending into the fourth ventricle (B), with thick rim enhancement on coronal T1 with gadolinium (C) extending from the right cerebellopontine angle to the foramen magnum.

Figure 2 Histopathology of schwannoma



Histopathology of the resected tumor shows mixed cellularity: Antoni A pattern (high cellularity) dominated by spindle cells with nuclear palisading pattern forming Verocay bodies, and Antoni B (less cellular) dominated with stellate cells on hematoxylin & eosin (A), strongly expressing S-100 (B), and low Ki67 proliferative index of 1%–3% (C), consistent with World Health Organization grade I schwannoma.

A 30-year-old man was intubated after sudden severe headache, loss of consciousness, and apnea. CT showed acute hemorrhage in the posterior fossa, brainstem compression, and intraventricular extension with early obstructive hydrocephalus (figure 1A). MRI showed a large heterogeneously enhancing extra-axial tumor extending from the cerebellopontine angle to

the foramen magnum (figure 1, B and C). Intraoperatively the tumor was purely intracranial, arising from the right vagus nerve. He remained apneic postoperatively. Pathology was consistent with schwannoma (figure 2).

Lower cranial nerve schwannomas constitute 3% of all intracranial schwannomas; purely intracranial

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vagal schwannomas are particularly infrequent.¹ Intratumoral and subarachnoid hemorrhage rarely occur with schwannomas.²

AUTHOR CONTRIBUTIONS

Drs. Rizek, Lincoln, and Wolf: study design and concept, drafting and revising the manuscript. Drs. Entwistle and Kurdi: revision of selected figures and legends.

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DISCLOSURE

P. Rizek reports no disclosures. M. Lincoln is a member of the Resident & Fellow Section of *Neurology*[®]. A. Wolf, B. Entwistle, and M. Kurdi report no disclosures. Go to Neurology.org for full disclosures.

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