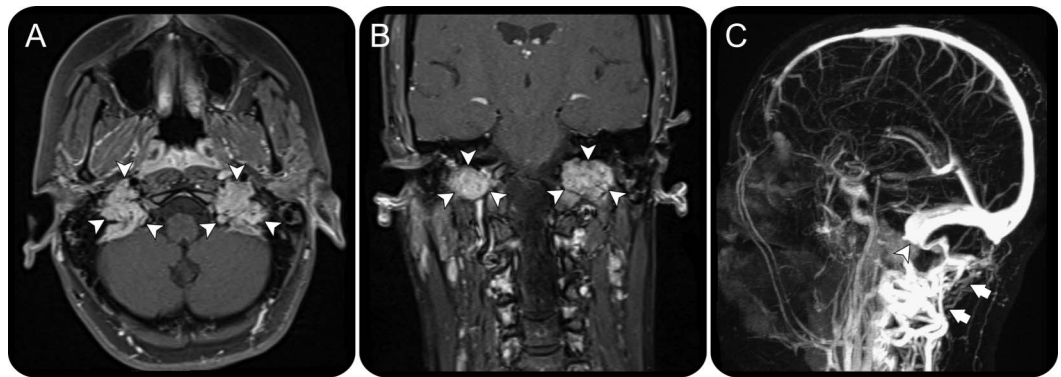


Bilateral jugular paragangliomas

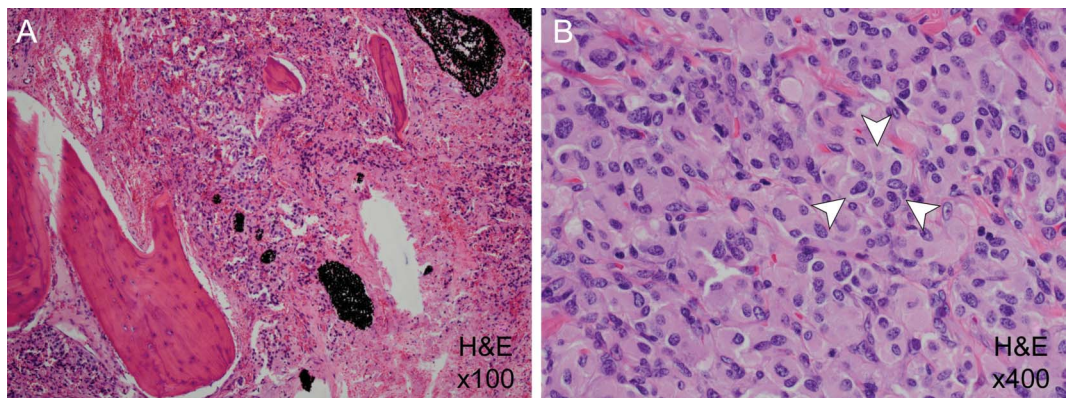
A rare cause of raised intracranial pressure

Figure 1 MRI findings



(A) Axial and (B) coronal T1 show enhancing lesions (arrowheads) surrounding both internal jugular veins. (C) Magnetic resonance venography shows occluded internal jugular veins (arrowhead) with collaterals (arrows).

Figure 2 Histopathology



(A) Tumor infiltrating surrounding tissues. (B) Characteristic nests of plump cells (zellballen, arrowheads) with prominent thin-walled vasculature. H&E = hematoxylin and eosin.

A 28-year-old woman presented with a 2-year history of pulsatile tinnitus with recent onset of headaches and bilateral transient visual obscurations. Examination revealed bilateral optic disc edema. MRI showed enhancing lesions surrounding the internal jugular veins and magnetic resonance venography showed bilateral internal jugular vein occlusions with extensive collaterals (figure 1). Both lesions were resected. The pathology was that of a paraganglioma (figure 2).

Paragangliomas are rare neuroendocrine tumors that are usually sporadic.¹ Bilateral jugular paragangliomas can present with symptoms and signs of raised intracranial pressure when they cause occlusion of the internal jugular veins and thus impair cerebral venous outflow.²

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Study funding: No targeted funding reported.

Disclosure: The authors report no disclosures relevant to the manuscript. Go to Neurology.org for full disclosures.

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1. Mendenhall WM, Amdur RJ, Vaysberg M, Mendenhall CM, Werning JW. Head and neck paragangliomas. *Head Neck* 2011; 33:1530–1534.
2. Izadi S, Karkos PD, Krishnan R, Hsuan J, Lesser TH. Papilloedema secondary to venous sinus thrombosis following glomus jugulare tumour surgery. *J Laryngol Otol* 2009;123:1393–1395.

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Neurology 2014;82;732-733

DOI 10.1212/WNL.0000000000000149

This information is current as of February 24, 2014

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