

Teaching NeuroImage: Abducens Nerve Palsy With Ipsilateral Excessive Eye Tearing Attributed to an Internal Carotid Artery Sympathetic Plexus Schwannoma

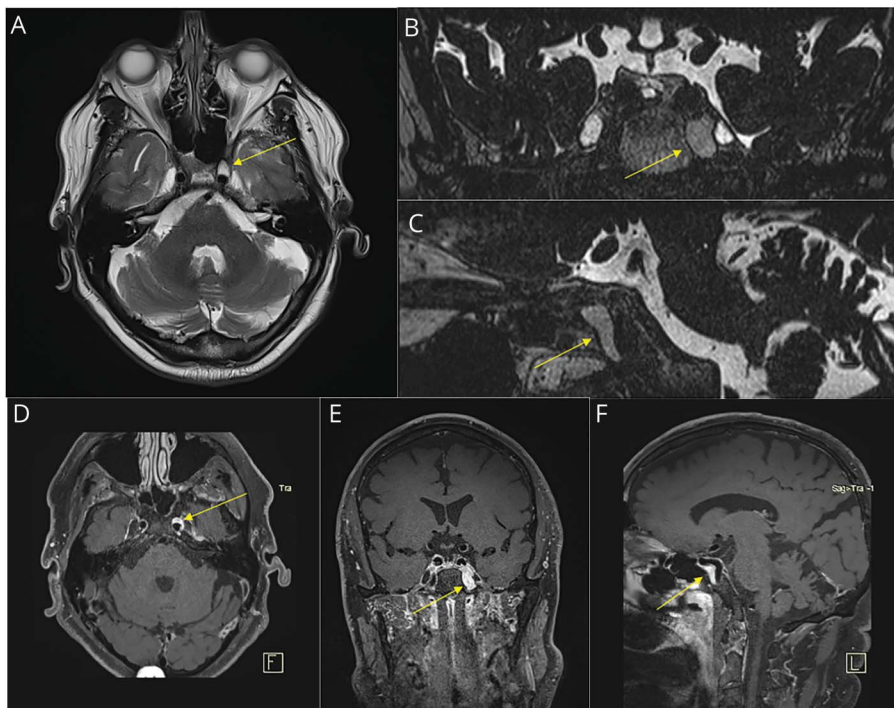
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Figure 1 Neuroimaging Findings of a Patient With an Internal Carotid Sympathetic Plexus Schwannoma



Axial brain MRI with T2-weighted sequence shows a hyperintense lesion along the anterior wall of the left internal carotid artery at the transition of the petrous to cavernous segment (A, arrow). Coronal (B) and sagittal (C) brain MRI with T2-weighted 3D turbo spin-echo (SPACE) sequence with multiplanar reconstruction demonstrate the elongated course of the lesion (arrows) within the left carotid canal, juxtapositionally to the internal carotid artery from the lower part of the cavernous segment until the midpart of the petrous segment. Axial (D), coronal (E), and sagittal (F) brain MRI with T1-weighted 3D SPACE black blood sequence show the homogeneously enhancing lesion (arrows) in the left carotid canal, surrounding the petrous and cavernous segments of the internal carotid artery.

A 65-year-old man developed subacute horizontal diplopia due to left abducens nerve (AN) palsy and excessive left eye tearing. Brain MRI revealed a hyperintense T2 lesion with an elongated course within the left carotid canal, presenting homogenous contrast enhancement (figure 1). The imaging findings were characteristic for an internal carotid artery sympathetic

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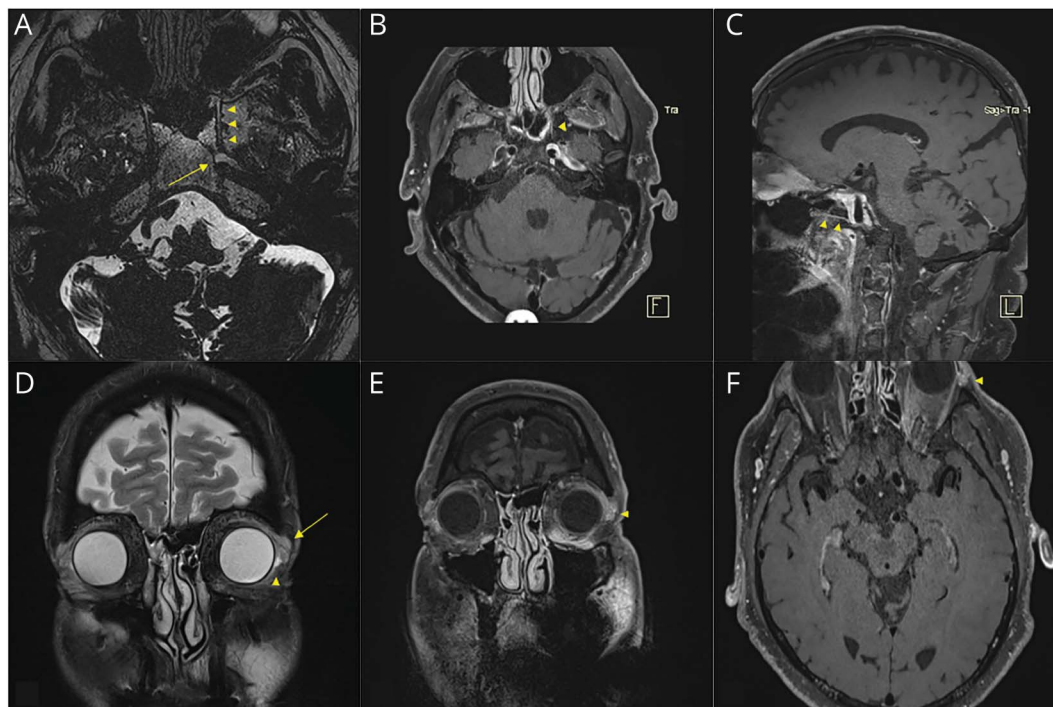
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Go to Neurology.org/N for full disclosures. Funding information and disclosures deemed relevant by the authors, if any, are provided at the end of the article.

Figure 2 Neuroimaging Findings of a Patient With Excessive Tearing Attributed to an Internal Carotid Sympathetic Plexus Schwannoma



Axial brain MRI with T2-weighted 3D turbo spin-echo (SPACE) sequence with multiplanar reconstruction shows the Vidian nerve (A, arrowheads) within the pterygoid canal in close proximity to the internal carotid sympathetic plexus schwannoma (A, arrow). Axial (B) and sagittal (C) brain MRI with T1-weighted 3D SPACE black blood sequence demonstrate the left Vidian canal as an enhancing linear structure (arrowheads) at the level of the petrous segment of the internal carotid artery. Coronal brain MRI with T2-weighted sequence with fat saturation shows an edematous, enlarged left lacrimal gland (D, arrow) compared to the healthy side and fluid accumulation in the left excretory lacrimal ducts (D, arrowhead). Coronal (E) and axial (F) brain MRI with T1-weighted 3D SPACE black blood sequence confirm the enlargement of the left lacrimal gland with more intense contrast enhancement (arrowheads) compared to the healthy side.

plexus (ICSP) schwannoma compressing the left AN. Subsequent irritation of the deep petrosal nerve originating directly from ICSP and continuing as the Vidian nerve may have led to the lacrimal gland edema and excessive left eye tearing (figure 2). Thorough case presentation and a figure demonstrating the relevant anatomy are available from Dryad at doi.org/10.5061/dryad.pzgmsbck6.

ICSP schwannoma represents an uncommon cause of AN palsy^{1,2} that may also manifest with excessive ipsilateral eye tearing due to Vidian nerve involvement.

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Disclosure

The authors report no disclosures. Go to [Neurology.org/N](https://www.neurology.org/N) for full disclosures.

Appendix Authors

Name	Location	Contribution
Lina Palaiodimou, MD	National and Kapodistrian University of Athens, Greece	Data collection, analysis and interpretation, drafting and revising the manuscript
Stefanos Lachanis, MD	Iatropolis Magnetic Resonance Diagnostic Centre, Athens, Greece	Data collection, analysis and interpretation, critical comments during manuscript revision
Eleni Bakola, MD	National and Kapodistrian University of Athens, Greece	Critical comments during manuscript revision
Panagiotis Zis, MD, PhD	University of Cyprus, Nicosia	Critical comments during manuscript revision
Evangelia Kararizou, MD, PhD	National and Kapodistrian University of Athens, Greece	Critical comments during manuscript revision

Appendix *(continued)*

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Georgios Tsvigoulis, MD, PhD	National and Kapodistrian University of Athens, Greece; The University of Tennessee Health Science Center, Memphis	Data collection, analysis and interpretation, drafting and revising the manuscript

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