

# Teaching NeuroImages: Collet-Sicard syndrome and hearing loss with glomus jugulotympanicum

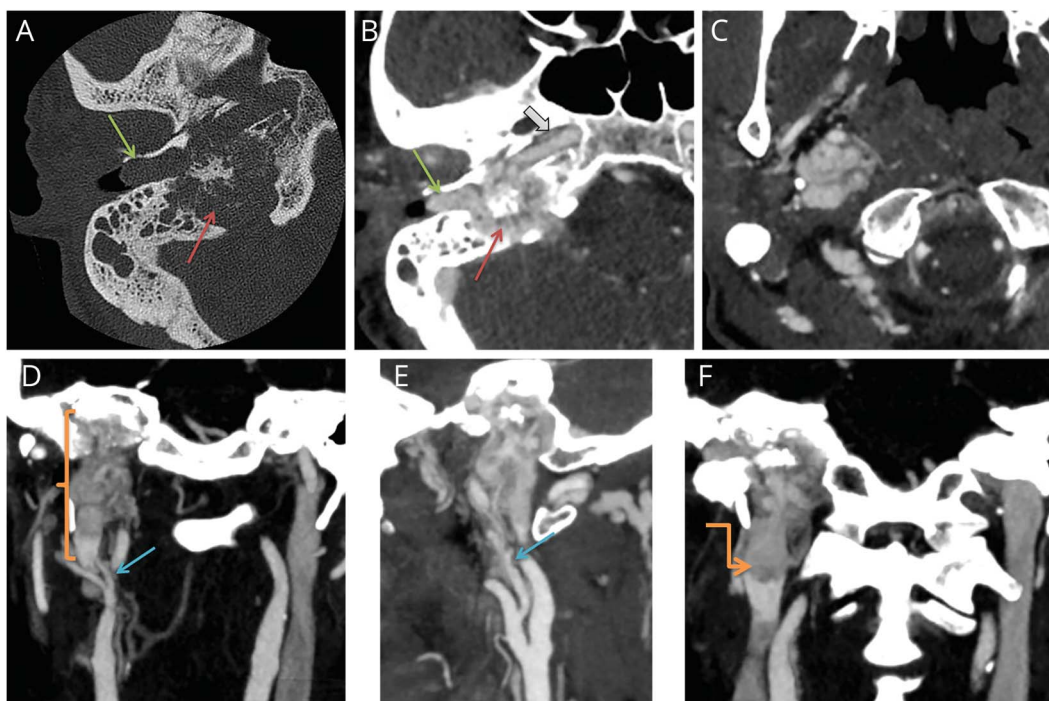
Aravind Ganesh, MD, DPhil, Zarina Assis, MD, Daniel Fok, MD, FRCPC, J. Gregory Cairncross, MD, Simerpreet S. Bal, MD, FRCPC, and Sarah Furtado, MD, PhD, FRCPC

## Correspondence

Dr. Ganesh  
aravindganeshy@yahoo.ca

*Neurology*® 2019;93:e1408-e1409. doi:10.1212/WNL.0000000000008205

**Figure 1** CT head/neck



Axial temporal bone study (A) shows expansile lytic right jugular fossa lesion (red arrow) extending into external ear canal (green arrow), contrast-enhancing (B), extending within carotid sheath, displacing internal carotid artery anteriorly (C). Contrast-enhanced CT neck (D, coronal) demonstrates craniocaudal extension along carotid space (orange bracket), hypertrophied external carotid feeding branches (blue arrow, E: sagittal), and internal jugular vein invasion (orange arrow, F: coronal).

A 56-year-old woman presented with headache, vomiting for 3 days, and right hearing loss, tinnitus, and dysphagia over 3 months. Examination showed decreased right palate elevation and atrophy of right sternocleidomastoid, trapezius, and tongue with rightward tongue deviation, indicating Collet-Sicard syndrome (involving cranial nerves IX–XII in jugular foramen and hypoglossal canal).<sup>1</sup> Hearing loss suggested auditory canal extension. Imaging showed a right skull base mass in keeping with glomus tumor (figures 1 and 2). Given surgical risks, radical radiotherapy was performed, arresting tumor growth. Glomus jugulare tumors, hypervascular paragangliomas, are the most common tumors in the jugular foramen and can extend into the middle ear (jugulotympanicum).<sup>2</sup>

## MORE ONLINE

### →Teaching slides

[links.lww.com/WNL/A964](https://links.lww.com/WNL/A964)

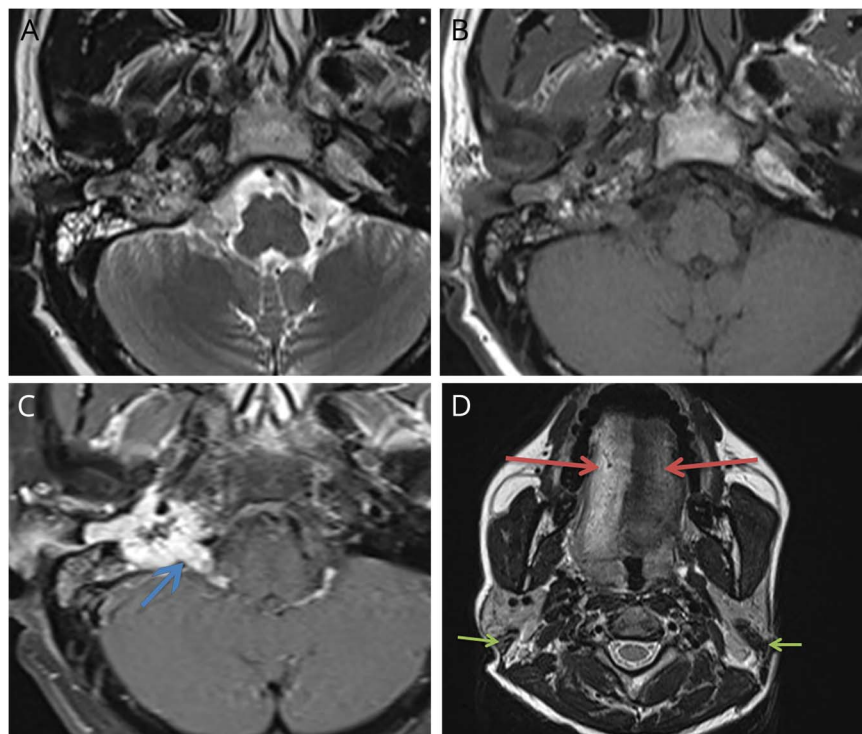
## Author contributions

A. Ganesh: concept, acquisition of data, and writing the initial drafts of the manuscript. Z. Assis: acquisition of data and critical revision of manuscript for intellectual content. D. Fok: acquisition of data and critical revision of manuscript for intellectual content. J.G. Cairncross: concept and critical revision of manuscript for intellectual content. S.B. Bal: concept and critical revision of manuscript

From the Department of Clinical Neurosciences (A.G., Z.A., D.F., J.G.C., S.S.B., S.F.) and Department of Radiology (Z.A.), University of Calgary, Canada.

Go to [Neurology.org/N](https://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** MRI head/neck



Axial T2-weighted (A) and T1-weighted (B) MRI show right jugular fossa lesion with salt-and-pepper appearance. Postcontrast T1-weighted MRI (C) shows enhancement and extension into cerebello-medullary angle through widened hypoglossal canal (blue arrow). Axial T2-weighted MRI (D) shows fatty degeneration of right tongue (red arrows) and atrophy of right sternocleidomastoid (green arrows).

for intellectual content. S. Furtado: concept and critical revision of manuscript for intellectual content.

### Study funding

No targeted funding reported.

### Disclosure

A. Ganesh serves on the *Neurology*<sup>®</sup> editorial board. Z. Assis, D. Fok, J. Cairncross, S. Bal, and S. Furtado report no

disclosures relevant to the manuscript. Go to [Neurology.org/N](http://Neurology.org/N) for full disclosures.

### References

1. Schuster NM, Karnezis S, Restrepo L. Teaching NeuroImages: granulomatosis with polyangiitis causing Collet-Sicard syndrome and refractory headache. *Neurology* 2015;85:e179–e180.
2. Fayad JN, Schwartz MS, Brackmann DE. Treatment of recurrent and residual glomus jugulare tumors. *Skull Base* 2009;19:92–98.

# Neurology®

## Teaching NeuroImages: Collet-Sicard syndrome and hearing loss with glomus jugulotympanicum

Aravind Ganesh, Zarina Assis, Daniel Fok, et al.

*Neurology* 2019;93:e1408-e1409

DOI 10.1212/WNL.00000000000008205

**This information is current as of September 30, 2019**

<b>Updated Information &amp; Services</b>	including high resolution figures, can be found at: <a href="http://n.neurology.org/content/93/14/e1408.full">http://n.neurology.org/content/93/14/e1408.full</a>
<b>References</b>	This article cites 2 articles, 1 of which you can access for free at: <a href="http://n.neurology.org/content/93/14/e1408.full#ref-list-1">http://n.neurology.org/content/93/14/e1408.full#ref-list-1</a>
<b>Subspecialty Collections</b>	This article, along with others on similar topics, appears in the following collection(s): <b>All Clinical Neurology</b> <a href="http://n.neurology.org/cgi/collection/all_clinical_neurology">http://n.neurology.org/cgi/collection/all_clinical_neurology</a> <b>All Oncology</b> <a href="http://n.neurology.org/cgi/collection/all_oncology">http://n.neurology.org/cgi/collection/all_oncology</a> <b>CT</b> <a href="http://n.neurology.org/cgi/collection/ct">http://n.neurology.org/cgi/collection/ct</a> <b>MRI</b> <a href="http://n.neurology.org/cgi/collection/mri">http://n.neurology.org/cgi/collection/mri</a>
<b>Permissions &amp; Licensing</b>	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: <a href="http://www.neurology.org/about/about_the_journal#permissions">http://www.neurology.org/about/about_the_journal#permissions</a>
<b>Reprints</b>	Information about ordering reprints can be found online: <a href="http://n.neurology.org/subscribers/advertise">http://n.neurology.org/subscribers/advertise</a>

*Neurology*® is the official journal of the American Academy of Neurology. Published continuously since 1951, it is now a weekly with 48 issues per year. Copyright © 2019 American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.

