

Teaching NeuroImages: Transependymal Oozing of Intrathecal Contrast Mimicking Intracerebral Hemorrhage

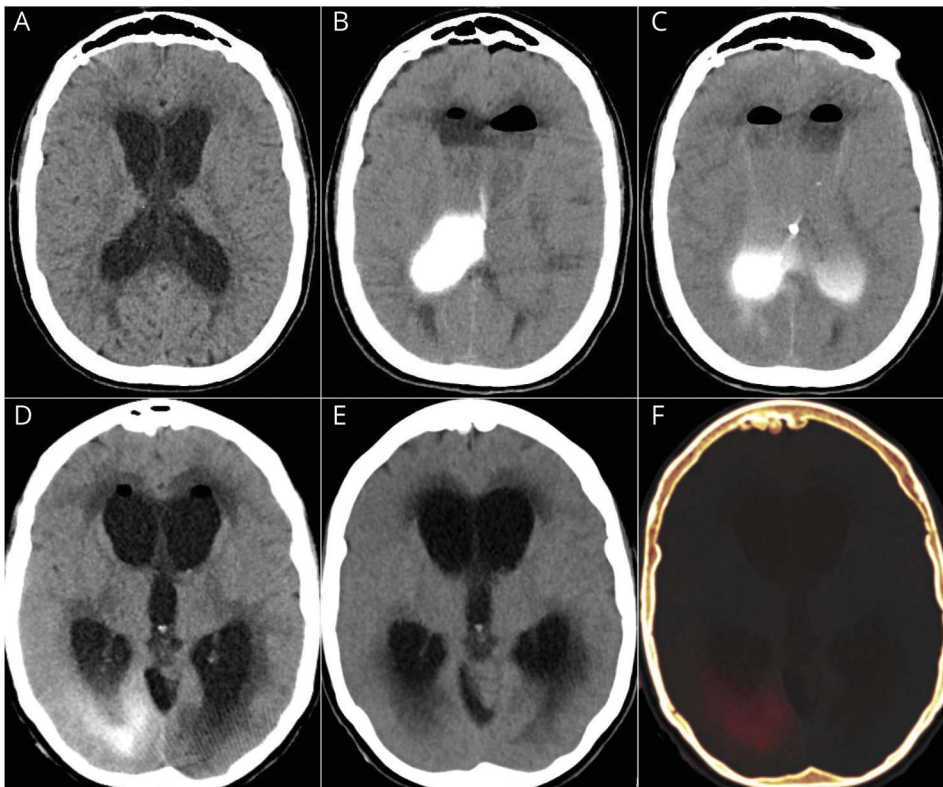
Bryan J. Neth, MD, PhD, Rafid Mustafa, MD, Sherri A. Braksick, MD, and Eelco F.M. Wijdicks, MD, PhD

Neurology® 2021;96:e2779-e2780. doi:10.1212/WNL.0000000000011546

Correspondence

Dr. Wijdicks
wijde@mayo.edu

Figure Transependymal Oozing of Iodinated Contrast Into Periventricular Brain Parenchyma



(A) Baseline CT shows hydrocephalus. (B) Ventriculogram shows hyperdense contrast (Omnipaque180, 10 mL). (C) Subtle hyperdense parenchymal contrast (day 1). Dual-energy CT (day 5) confirms parenchymal involvement: (D) initial image, (E) reconstructed image assessing for blood, (F) fused overlay showing contrast (red). Parenchymal contrast resolved on CT 17 days postventriculogram.

A 58-year-old woman presented with headache and nausea after resection of a craniocervical junction meningioma. CT head showed acute hydrocephalus (figure, A). CT ventriculogram showed no concern for CSF leak. Contrast remained in the ventricles on first postprocedure image (figure, B), but repeat CT head showed transependymal movement of contrast into brain parenchyma over the next several days (figure, C–F). Glymphatic clearance of intrathecal contrast has been shown to be reduced in patients with idiopathic normal-pressure

MORE ONLINE

→ **Teaching slides**
links.lww.com/WNL/B316

From the Department of Neurology, Mayo Clinic, Rochester, MN.

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.

Copyright © 2021 American Academy of Neurology

Copyright © 2021 American Academy of Neurology. Unauthorized reproduction of this article is prohibited.

e2779

hydrocephalus, which may facilitate intraparenchymal oozing.¹ It may linger after intrathecal contrast has washed out and is indistinguishable from blood without dual-energy CT.²

Study Funding

No targeted funding reported.

Disclosure

The authors report no disclosures relevant to the manuscript. Go to Neurology.org/N for full disclosures.

Appendix Authors

Name	Location	Contribution
Bryan J. Neth, MD, PhD	Mayo Clinic, Rochester, MN	Designed and conceptualized report, drafted and revised the manuscript for intellectual content

Appendix (continued)

Name	Location	Contribution
Rafid Mustafa, MD	Mayo Clinic, Rochester, MN	Designed and conceptualized report, drafted and revised the manuscript for intellectual content
Sherri Braksick, MD	Mayo Clinic, Rochester, MN	Designed and conceptualized report, revised the manuscript for intellectual content
Eelco F.M. Wijdicks, MD, PhD	Mayo Clinic, Rochester, MN	Designed and conceptualized report, revised the manuscript for intellectual content

References

1. Ringstad G, Vatnehol SAS, Eide PK. Glymphatic MRI in idiopathic normal pressure hydrocephalus. *Brain*. 2017;140:2691-2705.
2. Postma AA, Das M, Stadler AA, Wildberger JE. Dual-energy CT: what the neuro-radiologist should know. *Curr Radiol Rep*. 2015;3:16.

Neurology[®]

Teaching NeuroImages: Transependymal Oozing of Intrathecal Contrast Mimicking Intracerebral Hemorrhage

Bryan J. Neth, Rafid Mustafa, Sherri A. Braksick, et al.

Neurology 2021;96:e2779-e2780 Published Online before print January 27, 2021

DOI 10.1212/WNL.0000000000011546

This information is current as of January 27, 2021

Updated Information & Services	including high resolution figures, can be found at: http://n.neurology.org/content/96/22/e2779.full
References	This article cites 2 articles, 0 of which you can access for free at: http://n.neurology.org/content/96/22/e2779.full#ref-list-1
Subspecialty Collections	This article, along with others on similar topics, appears in the following collection(s): CT http://n.neurology.org/cgi/collection/ct Hydrocephalus http://n.neurology.org/cgi/collection/hydrocephalus
Permissions & Licensing	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: http://www.neurology.org/about/about_the_journal#permissions
Reprints	Information about ordering reprints can be found online: http://n.neurology.org/subscribers/advertise

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 © 2021 American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.

