Teaching *NeuroImages*: Multicompartmental intracranial hemorrhage in a pediatric patient

James E. Siegler, MD
Rebecca N. Ichord, MD

Correspondence to
Dr. Siegler:
james.siegler@uphs.upenn.edu

Figure Neuroimaging

(A) Axial CT of the head at presentation. Deep, intraparenchymal hemorrhage (arrow) with subarachnoid extension (arrowhead). (B) Coronal CT angiography of the head demonstrating intraparenchymal hemorrhage (asterisk), intraventricular extension (arrow), and middle cerebral artery aneurysm (arrowhead). (C) Digital subtraction angiography after decompressive hemicraniectomy (arrowheads indicate staples), confirming 7-mm aneurysm (arrow).

A previously healthy 9-year-old girl presented with sudden-onset headache followed by confusion. In the emergency department, she was hypertensive, bradycardic, and no longer responsive to any stimuli. An emergent head CT scan demonstrated a left frontal intraparenchymal hematoma with intraventricular and subarachnoid extension as well as subfalcine herniation (figure). She underwent decompressive hemicraniectomy, and digital subtraction angiography confirmed a 7-mm left middle cerebral artery aneurysm (figure).

Intracranial hemorrhage in a pediatric patient that traverses multiple compartments (intraparenchymal, subarachnoid, and intraventricular) has a short differential that should include trauma, coagulopathy, vascular abnormalities (middle cerebral artery aneurysm, arteriovenous malformation, dural arteriovenous fistulas, and reversible cerebral vasoconstriction), venous thrombosis, and cocaine abuse.^{1–3}

AUTHOR CONTRIBUTIONS

Dr. James E. Siegler: conception of the idea of the manuscript, drafting of the original manuscript, preparation of images, and critical revisions to the

manuscript for important intellectual content. Dr. Rebecca N. Ichord: drafting of the manuscript and critical revisions to the manuscript for important intellectual content.

STUDY FUNDING

No targeted funding reported.

DISCLOSURE

J. Siegler is a member of the *Neurology*® Resident & Fellow Section. James E. Siegler reports no competing financial interests exist. R. Ichord receives generous grant support from the NIH. Go to Neurology.org for full disclosures.

REFERENCES

1. Fetcko KM, Hendricks BK, Scott J, Cohen-Gadol AA. Atraumatic multifocal intracerebral hemorrhage. *J Clin Neurosci* 2016;31:213–216.
2. Martin-Schild S, Albright KC, Halleivi H, et al. Intracerebral hemorrhage in cocaine users. *Stroke* 2010;41:680–684.
3. Oh JW, Lee JY, Lee MS, Jung HH, Whang K; Brain Research Group. The meaning of the prognostic factors in ruptured middle cerebral artery aneurysm with intracerebral hemorrhage. *J Korean Neurosurg Soc* 2012;52:80–84.

Neurology®

Teaching *NeuroImages*: Multicompartmental intracranial hemorrhage in a pediatric patient

James E. Siegler and Rebecca N. Ichord

Neurology 2016;87:e284

DOI 10.1212/WNL.00000000000003410

This information is current as of December 5, 2016

Updated Information & Services	including high resolution figures, can be found at: http://n.neurology.org/content/87/23/e284.full
Supplementary Material	Supplementary material can be found at: http://n.neurology.org/content/suppl/2016/12/05/WNL.00000000000003410.DC1
References	This article cites 3 articles, 1 of which you can access for free at: http://n.neurology.org/content/87/23/e284.full#ref-list-1
Subspecialty Collections	This article, along with others on similar topics, appears in the following collection(s): Childhood stroke http://n.neurology.org/cgi/collection/childhood_stroke Intracerebral hemorrhage http://n.neurology.org/cgi/collection/intracerebral_hemorrhage Subarachnoid hemorrhage http://n.neurology.org/cgi/collection/subarachnoid_hemorrhage
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 © 2016 American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.