Teaching *NeuroImages*: T2 hyperintensities in neurofibromatosis type 1

Adam P. Ostendorf, MD
Robert C. McKinstry,
MD, PhD
Joshua S. Shimony, MD,
PhD
David H. Gutmann, MD,
PhD

Correspondence to
Dr. Gutmann:
gutmann@neuro.wustl.edu

Figure T2 hyperintensities in a child with neurofibromatosis type 1

Brain MRI from 2003 revealed a T2 hyperintensity in the right basal ganglia, frequently observed in children with neurofibromatosis type 1. In 2012, a cyst-like mass was found in the identical location associated with a new left hemiparesis and hyperreflexia. (A, C) Fluid-attenuated inversion recovery images; (B, D) T1-weighted images.

A 4-year-old boy with neurofibromatosis type 1 (NF1), an asymptomatic optic glioma, and a right basal ganglia T2-hyperintense lesion (figure, A and B) developed a left hemiparesis with hyperreflexia over the course of a year. Neuroimaging revealed a cyst-like mass in the region of his previously identified T2 hyperintensity (figure, C and D). While it is often difficult to distinguish T2 hyperintensities from low-grade glioma without tissue diagnosis,¹ even with advanced imaging methods,² T2 hyperintensities typically disappear with age and do not become cystic with associated mass effect. Coupled with the development of new neurologic

signs, these MRI features are worrisome for neoplasm in a patient with NF1.

AUTHOR CONTRIBUTIONS

A.P.O. wrote the initial draft of the manuscript. R.C.M. and J.S.S. reviewed the MRI data. D.H.G. performed the final editing.

STUDY FUNDING

No targeted funding reported.

DISCLOSURE

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

REFERENCES

1. DeBella K, Poskitt K, Szudek J, Friedman JM. Use of “unidentified bright objects” on MRI for diagnosis of neurofibromatosis 1 in children. *Neurology* 2000;54:1646–1651.
2. Ferraz-Filho JR, da Rocha AJ, Muniz MP, Souza AS, Goloni-Bertollo EM, Pavarino-Bertelli EC. Diffusion tensor MR imaging in neurofibromatosis type 1: expanding the knowledge of microstructural brain abnormalities. *Pediatr Radiol* 2012;42:449–454.

Neurology®

Teaching *NeuroImages*: T2 hyperintensities in neurofibromatosis type 1

Adam P. Ostendorf, Robert C. McKinstry, Joshua S. Shimony, et al.

Neurology 2013;80:e215-e216

DOI 10.1212/WNL.0b013e3182929f7c

This information is current as of May 13, 2013

Updated Information & Services	including high resolution figures, can be found at: http://n.neurology.org/content/80/20/e215.full
Supplementary Material	Supplementary material can be found at: http://n.neurology.org/content/suppl/2013/05/13/80.20.e215.DC1
References	This article cites 2 articles, 1 of which you can access for free at: http://n.neurology.org/content/80/20/e215.full#ref-list-1
Subspecialty Collections	This article, along with others on similar topics, appears in the following collection(s): All Pediatric http://n.neurology.org/cgi/collection/all_pediatric Developmental disorders http://n.neurology.org/cgi/collection/developmental_disorders MRI http://n.neurology.org/cgi/collection/mri Neurofibromatosis http://n.neurology.org/cgi/collection/neurofibromatosis Primary brain tumor http://n.neurology.org/cgi/collection/primary_brain_tumor
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 © 2013 American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.