

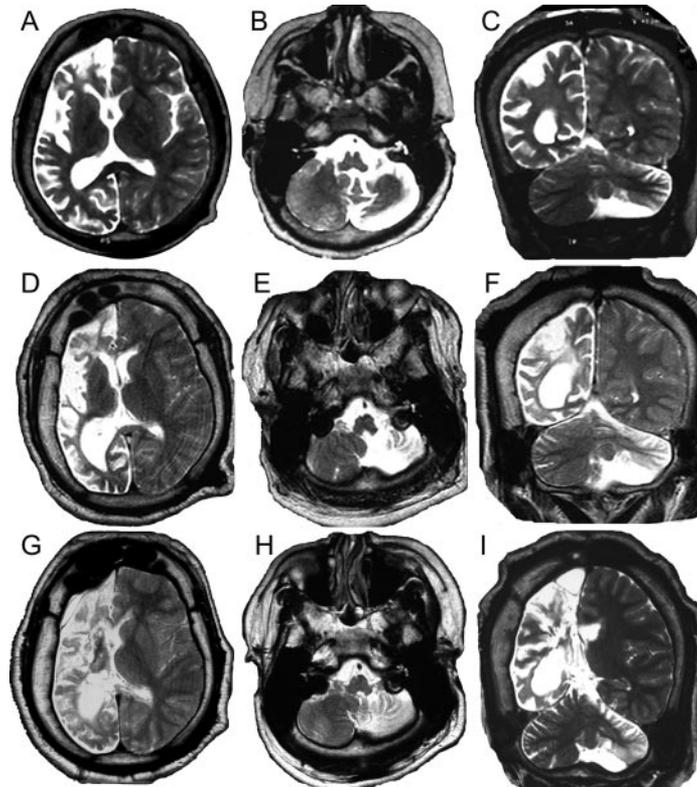
# Teaching NeuroImages: Diaschisis

Is it always reversible?

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Figure Brain MRI (1.5 T)



(A-C) Brain MRI (1997): Axial (A, B) and coronal (C) T2-weighted fast spin echo images show atrophy of the right cerebral and left cerebellar hemispheres. (D-F) MRI (2007): Corresponding axial (D, E) and coronal (F) T2-weighted fast spin echo images show the progression of atrophy of the left cerebellar hemisphere, right cerebral peduncle, and right cerebral hemisphere. (G-I) MRI (2008): Images (G-I) 1 year after hemispherotomy show no further progression of cerebellar atrophy.

A 17-year-old boy presented with left focal seizures and progressive hemiparesis for 10 years. Serial MRIs showed progressive right cerebral and contralateral cerebellar atrophy (figure). He is seizure-free after right hemispherotomy. Pathology was compatible with Rasmussen encephalitis.

Crossed cerebellar diaschisis and subsequent crossed cerebellar atrophy, due to supratentorial lesions or chronic focal seizures, represents the best evidence of transneuronal depression in humans.<sup>1</sup> Contrary to the original concept of reversible dysfunction in diaschisis,<sup>2</sup> distant areas may undergo irreversible degeneration depending upon the nature

of the primary process. Progressive crossed cerebellar atrophy has been mainly reported with conditions associated with chronic focal seizures,<sup>1</sup> presumably related to additional transneuronal excitotoxic damage.

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*Disclosure:* The authors report no disclosures.

# Neurology<sup>®</sup>

**Teaching NeuroImages: Diaschisis: Is it always reversible?**  
Neeraj N. Baheti, Atma Ram Bansal, Chaturbhuj Rathore, et al.  
*Neurology* 2009;72;e79  
DOI 10.1212/01.wnl.0000347011.27820.f3

**This information is current as of April 20, 2009**

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