Teaching *NeuroImages*: Macrocephaly with subcortical calcifications in vein of Galen aneurysmal malformation

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A previously asymptomatic 3-year-old boy presented with a large head, generalized seizures, and vision impairment for 7 months. Examination revealed macrocephaly (52 cm) and prominent scalp and facial veins. There was bilateral disc pallor and sixth nerve palsies. Developmental assessment and the remainder of the neurologic and systemic examinations were unremarkable. Neuroimaging led to a diagnosis of vein of Galen aneurysmal malformation (VGAM) (figures 1 and 2).

The clinical presentation in VGAM is either related to the high output cardiac failure or cerebral venous congestion and abnormal CSF flow. In untreated VGAMs, ischemia due to venous congestion in watershed region results in development of subcortical white matter calcifications and subependymal atrophy with ventricular dilation.¹

Figure 2 Magnetic resonance venography shows the dilated vein of Galen

Figure 1 CT brain in vein of Galen aneurysmal malformation

Noncontrast (A) CT axial image of brain showing bilaterally symmetric calcifications in basal ganglia and subcortical white matter (black arrow). The hyperdense (white arrow) dilated vein of Galen shows intense enhancement in the contrast-enhanced CT (B).

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