A Twisted Tale of Vein of Galen Aneurysmal Malformation

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Abstract

This illustration presents a three-dimensional representation of the vascular structure of the vein of Galen aneurysmal malformation (VGAM), which is a rare congenital brain vascular abnormality characterized by the enlargement of the embryonic precursor of the vein of Galen—specifically, the median prosencephalic vein of Markowski. VGAM constitutes an arteriovenous fistula formed between the deep choroidal arteries and the embryonic median prosencephalic vein. Its development initiates early but is typically detectable via sonography only during the second- or third-trimester of gestation. The comprehensive assessment of the vascular anatomy of VGAM necessitates the examination of both the incoming (afferent) and outgoing (efferent) vessels.

Keywords

- Vein of Galen Aneurysmal Malformation
- Congenital anomaly
- Vascular malformation

Vein of Galen aneurysmal malformation (VGAM) is a rare congenital brain vascular abnormality characterized by the enlargement of the embryonic precursor of the vein of Galen, specifically, the median prosencephalic vein of Markowski. VGAM constitutes an arteriovenous fistula formed between the deep choroidal arteries and the embryonic median prosencephalic vein. Its development initiates early but is typically detectable via sonography only during the second or third trimester of gestation. The comprehensive assessment of the vascular anatomy of VGAM necessitates the examination of both the incoming (afferent) arterial feeders and outgoing (efferent) venous vessels. VGAM is usually diagnosed after 28 weeks gestation. Very few cases have been reported diagnosed in second trimester. Prognosis depends upon ampullary volume, dilatation of straight sinus, and severity of tricuspid regurgitation. With the advent of endovascular neurointerventional techniques, the prospects for successful treatment of these lesions, once dismal, are now much improved. Several treatment strategies have been advocat-

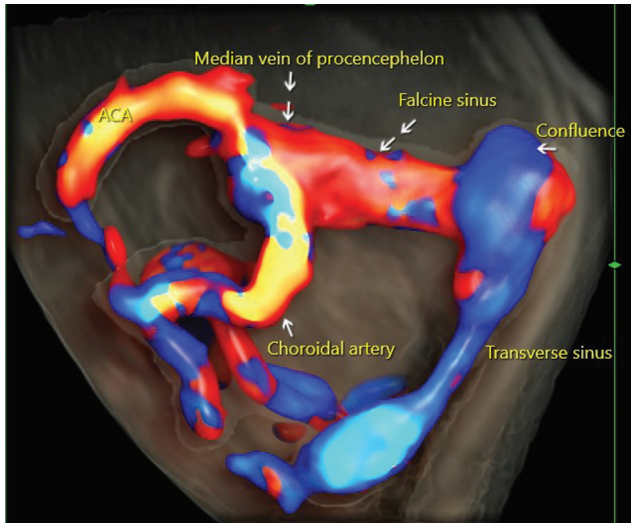

Fig. 1 The afferent arterial supply from deep choroidal arteries, aneurysmal dilation of vein of galen, venous drainage occuring through dilated falcine sinus.

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ed in the medical literature, varying in recommended avenue of approach (arterial or venous), embolization material (coils or glue), timing of treatment, and management of associated conditions such as hydrocephalus and congestive heart failure. We herein present our experience in diagnosing this rare condition at as early as 19 weeks. During routine anomaly scan, dilatation of superior vena cava was noted in three-vessel view and prompted us to see etiology that lead to VGAM. The afferent arterial supply from deep choroidal arteries, aneurysmal dilation of vein of galen, venous drainage occuring through dilated falcine sinus as shown in ►**Fig. 1**. We had performed advanced neurosonogram with three-dimensional reconstruction of vascular structure of VGAM.

Conflict of Interest
None declared.

