Mesencephalic developmental venous anomaly

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Mesencephalic developmental venous anomaly (MDVA) is a rare vascular abnormality that involves the veins in the midbrain (mesencephalon), which is the part of the brainstem that connects the brain to the spinal cord. It is also known as a developmental venous anomaly (DVA) of the midbrain.

MDVA is usually asymptomatic and is discovered incidentally on brain imaging studies such as magnetic resonance imaging (MRI) or computed tomography (CT) scans. It is thought to be a congenital malformation, meaning that it is present at birth and develops during fetal development.

MDVA is characterized by a group of veins that drain into a single larger vein, which then drains into a deeper venous structure called the basal vein of Rosenthal. It is usually not associated with any significant clinical consequences and does not require any specific treatment, although in rare cases it may be associated with hemorrhage or other neurological symptoms.

A 48-year-old female who presented with depression. Computed tomography and magnetic resonance imaging (MRI) of the head revealed obstructive hydrocephalus. Contrast-enhanced MRI revealed an abnormally distended linear region with enhancement on the top of the cerebral aqueduct, which was confirmed as a DVA by digital subtraction angiography. An endoscopic third ventriculostomy (ETV) was performed to improve the patient's symptoms. Intraoperative endoscopic imaging showed obstruction of the cerebral aqueduct by the DVA.

This report describes a rare case of obstructive hydrocephalus caused by DVA. It highlights the usefulness of contrast-enhanced MRI for diagnosing cerebral aqueduct obstructions due to DVAs and the effectiveness of ETV as a treatment option [1].

1)

Hiraga K, Hayashi S, Oshima R, Kondo T, Kanamori F, Saito R. Mesencephalic developmental venous

anomaly causing obstructive hydrocephalus: illustrative case. J Neurosurg Case Lessons. 2023 Mar 20;5(12):CASE22563. doi: 10.3171/CASE22563. PMID: 36941200.