Vein of Galen malformation case reports

Transuterine ultrasound-guided fetal embolization of VGM was performed in a 33-week-old fetus, which was found to have a persistent fetal bradycardia and heart failure. The procedure was successful in reducing the size of the malformation, and the fetus was delivered without any complications. The newborn was found to be in good health without any signs of heart failure or neurological deficits. The authors suggest that transuterine ultrasound-guided fetal embolization can be a safe and effective treatment option for VGM, potentially eliminating the postnatal pathophysiology associated with this condition [1].

An 8-month-old patient with a Vein of Galen Malformation developed clinical signs of heart failure and growing head circumference with ventriculomegaly. The patient was treated endovascularly with a transvenous approach for coil embolization while undergoing continuous monitoring of the post-malformation venous pressures. The arterial and venous systolic blood pressures (SBP) were collected at serial time points and used to measure estimated 95% confidence interval bounds for arteriovenous SBP gradients and determine when sufficient coil embolization and flow reduction was thought to be achieved.

The transvenous pressure monitoring demonstrated progressively increasing pressure gradients between the arterial and venous systems that correlated with the degree of flow reduction on angiographic runs. The patient underwent successful coil embolization of the VGM and had improvement of heart failure and ventricular size in follow-up at 8-month post-op. This provides a novel technique to introduce an objective measurement that can guide the embolization of a VGM [2].

Kerolus et al. present an exceedingly rare case of a giant, untreated VoGM measuring 7.8 × 5.5 × 7 cm in a 42-year-old man [3].

1)
Orbach DB, Wilkins-Haug LE, Benson CB, Tworetzky W, Rangwala SD, Guseh SH, Gately NK, Stout JN, Mizrahi-Arnaud A, See AP. Transuterine Ultrasound-Guided Fetal Embolization of Vein of Galen Malformation, Eliminating Postnatal Pathophysiology. Stroke. 2023 May 4. doi: 10.1161/STROKEAHA.123.043421. Epub ahead of print. PMID: 37139817.
2)
Chang D, Babadjouni R, Nisson P, Chan JL, Quintero-Consuegra M, Toscano JF, Gonzalez NR. Transvenous Pressure Monitoring Guides Endovascular Treatment of Vein of Galen Malformation: A Technical Note. Pediatr Neurosurg. 2021 Jun 9:1-6. doi: 10.1159/000516446. Epub ahead of print. PMID: 34107474.
3)
Kerolus MG, Tan LA, Lopes DK. Giant vein of Galen malformation in an adult. Radiol Case Rep. 2017 Apr 15;12(3):585-589. doi: 10.1016/j.radcr.2017.03.012. eCollection 2017 Sep. PubMed PMID: 28828131; PubMed Central PMCID: PMC5551915.