Letter regarding “Developmental venous anomaly depicted incidentally in fetal MRI and confirmed in post-natal MRI”

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Dear Editor-in-Chief,

We read with interest the case reported by Geraldo et al. titled “Developmental venous anomaly depicted incidentally in fetal MRI and confirmed in post-natal MRI” [1]. In this article, the authors reported a case of a DVA in the left parietal lobe with a large subependymal venous collector. The authors state that the case report supports the concept of DVAs as congenital lesions.

While we certainly agree that DVAs may develop in utero and, on occasion, can present during fetal life, we believe that many DVAs actually form in post-natal life when venous development is still active. In a recently published article, we reviewed post-contrast MRIs of over 18,000 individuals and found that DVAs were present in 1.5% of patients <1 year old, 7.1% of patients 1–5 year old, 9.6% of patients 6–17 years old, and 9.6% of patients ≥ 18 years old. There was a significant positive association between age and the presence of a DVA [2].

Rather than DVAs necessarily being congenital lesions, we believe that DVAs form in the later periods of cerebral venous development as a functional adaptation to thrombosis or failure of development of superficial or deep veins. It is likely that late fetal or early post-natal venous occlusion triggers remodeling of medullary veins resulting in DVA formation. A late fetal venous occlusion is likely responsible for the isolated ventricular dilatation seen in this case report.

Furthermore, it is well established that venous development continues well into early human life [3]. There are substantial post-natal changes in venous architecture including cavernous sinus capture of the Sylvian vein

and alterations in posterior fossa venous drainage in humans. There have been a few bona fide case reports of de novo DVA formation in young children [4]. There are even studies demonstrating an association between CNS neoplasms and DVAs in young children—a finding suggesting that post-natal venous remodeling can occur due to a variety of stimuli, including neoplasms [5].

We would like to thank the authors for their valuable contribution to the literature. The ability to use fetal MRI to further understand the pathogenesis of DVAs and other cerebrovascular diseases is invaluable.

Compliance with ethical standards

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Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval NA

Informed consent NA

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