



Get Clarity On Generics

Cost-Effective CT & MRI Contrast Agents



FRESENIUS
KABI

WATCH VIDEO

AJNR

Reply:

Dong Hyun Yoo, Chul-Ho Sohn, Hyun-Seung Kang, Young Dae Cho and Kang Min Kim

AJNR Am J Neuroradiol published online 13 June 2024
<http://www.ajnr.org/content/early/2024/06/13/ajnr.A8348>

This information is current as
of August 10, 2025.

REPLY:

We greatly appreciate and read with interest the opinion by Abruzzo et al. We understand the argument that a venous-predominant AVM (vpAVM) is not a true AVM in that hyperemic capillary blush is observed, suggesting that the parenchymal capillary bed with rapid transit time is involved in the circulation of the lesion. The lack of a definite nidus on DSA also supports their points. However, a number of case reports and series have addressed the resemblance of these lesions to true AVMs based on histologic similarity.^{1,2} Moreover, their angiographic and clinical features (early appearance of draining vein, various symptoms, and hemorrhage) are those of an AVM.

The nature of these lesions is not yet well-understood, and no definite terminology has been established. They are currently addressed with various terms such as atypical developmental venous anomaly (DVA), transitional venous anomaly, arterialized DVA, and DVA with an arteriovenous shunt. Whether AVM or not, the focus of our study was that arterial spin-labeling can distinguish DVA and vpAVM (or atypical DVA) without the patient having to undergo invasive DSA or the use of contrast agent. Because arterial spin-labeling is increasing in availability, we hope that our findings help readers recognize these rare disease entities in routine MR imaging clinical practice.

<http://dx.doi.org/10.3174/ajnr.A8348>

REFERENCES

1. Hirata Y, Matsukado Y, Nagahiro S, et al. **Intracerebral venous angioma with arterial blood supply: a mixed angioma.** *Surg Neurol* 1986;25:227–32 [CrossRef Medline](#)
2. Im SH, Han MH, Kwon BJ, et al. **Venous-predominant parenchymal arteriovenous malformation: a rare subtype with a venous drainage pattern mimicking developmental venous anomaly.** *J Neurosurg* 2008;108:1142–47 [CrossRef Medline](#)

Dong Hyun Yoo

Chul-Ho Sohn

Department of Radiology
Seoul National University Hospital
Seoul National University College of Medicine
Seoul, Korea

Hyun-Seung Kang

Department of Neurosurgery
Seoul National University Hospital
Seoul National University College of Medicine
Seoul, Korea

Young Dae Cho

Department of Radiology
Seoul National University Hospital
Seoul National University College of Medicine
Seoul, Korea

Kang Min Kim

Department of Neurosurgery
Seoul National University Hospital
Seoul National University College of Medicine
Seoul, Korea