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Reply:

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AJNR Am J Neuroradiol 2018, 39 (2) E34

doi: <https://doi.org/10.3174/ajnr.A5447>

<http://www.ajnr.org/content/39/2/E34>

This information is current as
of June 15, 2025.

REPLY:

We appreciate the comments from Lecler et al regarding our publication “Multinodular and Vacuolating Neuronal Tumor of the Cerebrum: A New ‘Leave Me Alone’ Lesion with a Characteristic Imaging Pattern.”¹ Several valid points have been raised about improving the confidence of making the presumptive diagnosis of multinodular and vacuolating neuronal tumor (MVNT) using advanced MR imaging techniques. Most of the MVNTs in our series showed virtually a pathognomonic imaging appearance, and presumptive diagnoses were made solely on the basis of conventional MR imaging sequences acquired on either a 1.5T or 3T scanner. From our study, we had established several key neuroimaging features to assist in the presumptive diagnosis of MVNT, which include the following: 1) clusters of discrete or coalescent nodular lesions located within the deep cortical ribbon and superficial subcortical white matter with an otherwise normal-appearing cortex, 2) absent or minimal contrast enhancement, and 3) stability on imaging follow-up.^{1,2}

We do agree with Lecler et al that higher field strength and spatial resolution increase the conspicuity of the MVNT nodules, which range from 1 to 5 mm in diameter.¹ From our experience with the higher resolution 3D MR imaging sequences, either the FLAIR or steady-state sequences (CISS and FIESTA) offer the best contrast resolution to show the MVNT nodules, which appear hyperintense on both T2-weighted and FLAIR sequences.¹ In our experience, MVNT nodules can coalesce to form a larger dominant lesion. The largest MVNT encountered in our case series measured 57 mm in maximum diameter.¹ Although larger size MVNTs have the potential to mimic diffuse gliomas, there are usually imaging clues, such as the presence of satellite nodules and the absent or minimal mass effect.^{1,2}

Perhaps, in this rare category of MVNT, advanced neuroimaging techniques such as MR spectroscopy, MR perfusion, or

[¹⁸F]FDG PET/MR imaging may have a role in excluding worrisome parameters such as hypervascularity, increased Cho/NAA and Cho/Cr ratios, and FDG hypermetabolism. It is also logical that the smaller-sized MVNT with discrete nodules may not have sufficient imaging resolution for accurate assessment with advanced neuroimaging techniques.

In summary, we agree that the presumptive diagnosis of classic MVNT would benefit from improved spatial resolution.^{1,2} Advanced neuroimaging techniques may have a role for lesions not fulfilling our proposed criteria for MVNT or for the evaluation of symptomatic MVNTs for the consideration of surgical options. Ultimately, the neuroimaging appearance of MVNT is sufficiently pathognomonic, and recognition of these features is the key to clinching the diagnosis.


REFERENCES

1. Nunes RH, Hsu CC, da Rocha AJ, et al. **Multinodular and vacuolating neuronal tumor of the cerebrum: a new “leave me alone” lesion with a characteristic imaging pattern.** *AJNR Am J Neuroradiol* 2017;38:1899–904 [CrossRef Medline](#)
2. Nunes RH, Hsu CC, Osborn AG. **Presumptive diagnosis of multinodular vacuolating tumor: “more than meets the eye!”** *Neuroradiology* 2017 Sep 8. [Epub ahead of print] [CrossRef Medline](#)

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<http://dx.doi.org/10.3174/ajnr.A5447>