Clubbing Due to Peripheral Hypervascularization: Recognition by Contrast-Enhanced, Three-Dimensional Magnetic Resonance Angiography

To the Editor:

The magnetic resonance angiogram of the left hand shown by Wiesmann et al is an incomplete display of the arteries that is further confounded by venous contamination. From this image, one cannot conclude that “there is no evidence of vasculitis or arterial stenosis or occlusion.” Spatial resolution of a fraction of a millimeter is required to diagnose vasculitis in the hand. Only conventional angiography, usually with intraarterial vasodilators, provides the required spatial resolution.

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Response

Drs McPhail and Stanson raise an important issue with regard to our article.1 We agree that technical improvements regarding coil and pulse program design will help increase the diagnostic accuracy of MRI and particularly magnetic resonance angiography (MRA). In this respect, recent methodological developments have shown significant improvements concerning spatial and temporal resolution for 3D MR visualization of vascular malformation of the hand.2–4

It is known that detection of vasculitis of the small arteries cannot exclusively be based on contrast-enhanced MRA. Therefore, we performed multiple laboratory tests in our patient, including white blood cell count differentiation, C-reactive protein, erythrocyte sedimentation rate, and vasculitis-associated antibody search. All showed normal results. Hence, given these combined results, there was no evidence of vasculitis from any of the performed diagnostic procedures.

MRA of this patient’s left hand, however, showed significant hypervascularization in the terminal digits, which is known to be associated with clubbing.5 The image shown in the current report1 was acquired in a late arterial phase after contrast injection. Absence of vasculitis or arterial stenosis or occlusion was diagnosed on additional images that were acquired in an earlier arterial phase not shown in the report.

Our main motivation for this case report was to demonstrate the future potential of MRA for non-invasive insight in vascular disease. However, we agree that because of the given limitations of spatial resolution of MRA, conventional x-ray angiography is the current gold-standard for detailed visualization and diagnosis of vascular morphology.

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