

Evidence Discussion (AB 43.2 & AB 43.3)

EviCore
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Abdominal Veins Other than Hepatic and Portal Veins and Renal Vein Thrombosis

- In cases of venous thrombosis CTA allows for evaluation of both arterial and venous structures, as well as nonvascular structures.^{1,2} Combined evaluation of both vascular and nonvascular findings results in sensitivity of 96% and specificity of 90-94%, when evaluating for mesenteric venous obstruction¹
- In the setting of chronic mesenteric venous thrombosis, duplex ultrasound may be useful. However, because of potential technical limitations (for example, overlying bowel gas or limited acoustic windows), imaging may be limited,^{1,2} and CTA may be more useful for full evaluation of both vascular and intestinal structures.¹
- Magnetic Resonance Angiography (MRA) allows for evaluation and follow-up of disorders of the vascular system. Various protocols are used for MRA imaging. Contrast-enhanced MRA has been demonstrated to allow for evaluation of the vasculature that is equivalent to catheter angiography.³
- Advantages of MRA (compared to catheter angiography) include lower cost, less invasiveness, and lack of exposure to ionizing radiation.³
- MRA is advantageous to CT scans (including CTA) because of lack of radiation exposure. In addition, various MRA techniques allow for quantification of blood flow as well as evaluation of oxygen saturation, which are not possible with CTA.³
- MRA is less operator-dependent than vascular ultrasound. In addition, the technique (and associated imaging) is less prone to limitations related to patient body habitus or presence of overlying bowel gas.³
- Disadvantages of MRA include susceptibility to motion artifact and exposure to gadolinium (for contrast-enhanced techniques), which has been associated with a complication known as nephrogenic systemic fibrosis (NSF) in patients with severe renal insufficiency.³

References:

1 Björck M, Koelemay M, Acosta S, et al. Editor's choice – management of the diseases of mesenteric arteries and veins. Clinical practice guidelines of the European Society of Vascular Surgery (ESVS). *Eur J Vasc Endovasc Surg*. 2017;53:460-510.

2 Ginsburg M, Obara P, Lambert D, et al. Expert Panels on Vascular Imaging and Gastrointestinal Imaging: ACR Appropriateness Criteria® Imaging of Mesenteric Ischemia. *J Am Coll Radiol*. 2018;15(11S):S332-40.

3 American College of Radiology (ACR), North American Society for Cardiovascular Imaging (NASCI), Society for Pediatric Radiology (SPR). ACR–NASCI–SPR Practice Parameter For The Performance Of Body Magnetic Resonance Angiography (MRA). American College of Radiology. Revised 2020.

