



REMARKS

1 US

- 1.1 Initial examination of choice for asymptomatic, clinically stable patients.
- 1.2 Should be a dedicated study (including complete longitudinal extent of abdominal aortic aneurysm (AAA), any involvement of common iliac arteries, relationship with renal arteries).
- 1.3 Difficult to delineate upper margin of AAA from juxtarenal level or above, and involvement of visceral vessels.
- 1.4 Limitations from patient's body, habitus and acoustic window.

2 CT

- 2.1 Non-contrast computed tomography (NCCT) may be considered when US is not suitable (e.g. obese patients).
- 2.2 NCCT may be considered in patients with or without clinical suspicion of impending or contained rupture.
- 2.3 Computed tomography angiogram (CTA) is best for definitive diagnosis and as a pre-interventional reference.
- 2.4 Useful information obtained from CTA includes morphology and full extent of the AAA, extent of mural thrombus, involvement of branch vessels, three-dimensional (3D) analysis (such as volume rendering, maximum intensity projection (MIP), multiplanar reformats).
- 2.5 First line imaging modality in the emergency setting for the assessment of suspected AAA rupture / impending or contained rupture.

3. MRI

- 3.1 Magnetic resonance angiogram (MRA) may be an alternative to CTA.
- 3.2 Non-contrast and contrast-enhanced sequences can be used.
- 3.3 Non-contrast sequences for patients with severe impaired renal function [glomerular filtration rate (GFR) <30]. Disadvantages of non-contrast MRA include suboptimal assessment of small vessel lesions / small side branches, susceptibility to flowing blood and blooming artefacts.
- 3.4 Other concerns include scanner accessibility, skilled operator / expertise availability, longer scanning time, decreased spatial resolution and general contraindications to MRI (such as pacemaker).
- 3.5 Significant artefacts can be encountered with certain types of stents other than nickel.

4 Catheter angiography

- 4.1 Usually not for establishing the diagnosis.
- 4.2 Essentially replaced by non-invasive imaging techniques in diagnosis (US, CTA).
- 4.3 May be used for pre-interventional planning.
- 4.4 Essential component of endovascular aortic repair (EVAR) procedure.

- 5 Management of AAA includes conservative approach, open surgery and EVAR; depending on clinical presentation, patient's profile and size / morphology of aneurysm:
 - 5.1 EVAR has emerged as an important treatment option in the management of AAA.
 - 5.2 With the advent of EVAR, pre-interventional imaging has become indispensable for surgical planning (suitability for stent graft deployment, delivery sheath size allowance).
 - 5.3 CTA is accepted as the gold standard for pre-EVAR planning, post-EVAR and post-open repair imaging surveillance.

REFERENCES

1. Reis SP, Majdalany BS, AbuRahma AF, et al. ACR Appropriateness Criteria® Pulsatile Abdominal Mass, Suspected Abdominal Aortic Aneurysm. Available at <https://acsearch.acr.org/docs/69414/Narrative/>. American College of Radiology. Accessed 2017 May 19.
2. Francois CJ, Kramer JH, Rybicki FJ, et al. ACR Appropriateness Criteria® Abdominal Aortic Aneurysm: Interventional Planning and Follow-up. Available at <https://acsearch.acr.org/docs/70548/Narrative/>. American College of Radiology. Accessed 2017 May 19.
3. The Royal College of Radiologists. iRefer: Making the best use of clinical radiology. 8th ed. London: The Royal College of Radiologists; 2017. Section CC12.