

Letter to the Editor

Magnetic Resonance or Computed Tomography for Aortic Imaging?

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I read with great interest the report by Karabinos et al¹ regarding the presentation and natural history of a patient with a penetrating aortic ulcer (PAU). However, there are some considerations regarding aortic imaging. The authors state twice in their paper that magnetic resonance angiography (MRA) is the gold standard method for evaluation of these patients. In the case the authors report, the patient was asymptomatic and stable, but often PAUs present acutely, with the typical aortic pain of the acute aortic syndrome of which PAU is a part.

MRA has the advantage of its lack of radiation and obviates the need to use potentially nephrotoxic contrast agents. It provides high tissue contrast, and thus excellent anatomical and functional information, and is ideal for patient follow up. However, the three-dimensional spatial resolution achievable with MRA is marginal for the coronary arteries that may be involved in patients with acute aortic syndrome.² MRA is also less practical in the context of the acute, critically ill patient and is contraindicated in the presence of some metallic implants and cardiac pacemakers.

ECG-gated multidetector computed tomography (ECG-MDCT) has emerged as a powerful tool in aortic imaging. It significantly reduces aortic and coronary motion artefacts, allowing accurate simultaneous coronary artery imaging, and may

avoid potential pitfalls in diagnosis and management, such as surgery where an artefact is misinterpreted as pathology. ECG-MDCT technology has evolved into a powerful clinical tool in the acute emergency setting and should be used as a first-line imaging method in patients presenting with suspected acute aortic syndrome.³ There is increasing evidence for the overall impact of ECG-MDCT imaging of the thoracic aorta, aside from coronary imaging. Studies focusing on the clinical impact of this technology in improving diagnostic accuracy and patients' outcomes are currently lacking, and multi-centre studies are needed to establish its role in aortic imaging. However, the experience of many authors supports its use.^{3,4}

References

1. Karabinos IK, Papadopoulos A, Kotoulas G, Katritsis D: The natural history of a penetrating atherosclerotic ulcer at the aortic arch. *Hellenic J Cardiol* 2006; 47: 308-309.
2. Wielopolski PA, van Geuns RJ, de Feyter PJ, Oudkerk M: Coronary arteries. *Eur Radiol* 1998; 8: 873-85.
3. Manghat NE, Morgan-Hughes GJ, Roobottom CA: Multidetector row computed tomography: Imaging in acute aortic syndrome. *Clin Radiol* 2005; 60: 1256-1267.
4. Hayter RG, Rhea JT, Small A, Tafazoli FS, Novelline NA: Suspected aortic dissection and other aortic disorders: multidetector row CT in 373 cases in the emergency setting. *Radiology* 2006; 238: 841-852.

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