IMAGES IN MEDICINE.....

Anomalous aortic arch anatomy: three dimensional visualisation with multislice computed tomography

Figure 1 Computed tomogram showing vessel lumen (arrowed) and surrounding haematoma.

Figure 2 Three dimensional reconstruction of the aortic arch: right and left common carotid arteries (A and B), left vertebral artery (C), left subclavian artery (D), and the most distal vessel, arising posteriorly, is the aneurysmal right subclavian artery (E).

A 72 year old woman, who presented with severe interscapular pain suggestive of aortic dissection, underwent further evaluation with multislice computed tomography. The contrast enhanced axial images showed extensive intraluminal haematoma within both the descending thoracic aorta and an anomalous, aneurysmal, right subclavian artery (fig 1). Three dimensional reconstruction of the aortic arch was carried out using surface volume rendering techniques. This allowed accurate definition of the aortic arch anatomy. From proximal to distal five separate vessels are identified arising from the arch (see fig 2).

Multislice computed tomography provides accurate, non-invasive, preoperative angiographic information for surgeons when planning surgery of the aorta and major mediastinal vessels. Rapid gantry rotation and simultaneous acquisition of multiple images "slices" combine to produce images within a relatively short scan time. Post-processing using volume rendering techniques and maximum intensity projections generate excellent three dimensional image quality. Multislice computed tomography is therefore ideally suited to this type of imaging. This multislice computed tomography scan was not electrocardiographically gated, but there is emerging evidence that gating images of the aorta to the cardiac cycle in order to reduce the effect of cardiac motion on artefact can improve image quality still further.

G Morgan-Hughes, C Roobottom*, N Ring*

South West Cardiothoracic Centre and *Department of Radiology, Plymouth NHS Trust, Plymouth, Devon

Correspondence to: G J Morgan-Hughes, Cardiology Department, SWCC, Plymouth NHS Trust, Derriford, Plymouth PL6 8DH, UK; hughesgj@talk21.com

The authors are undertaking research into the clinical applications of cardiac computed tomography. The work is partially supported by a grant from the Royal College of Radiologists.

Direct Access to Medline

Medline

Link to Medline from the homepage and get straight into the National Library of Medicine's premier bibliographic database. Medline allows you to search across 9 million records of bibliographic citations and author abstracts from approximately 3,900 current biomedical journals.

www.postgradmedj.com

www.postgradmedj.com