Effect of TEVAR on coronary perfusion and cardiac function as determined by quantitative dynamic MR imaging

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Disclosures

• None

The arch and ascending aorta

Courtesy: Roy Greenberg

Aortic stiffness

POSITION STATEMENT
Carotid-femoral pulse wave velocity (PWV) is the gold-standard measurement of arterial stiffness

\[ PWV = \frac{\Delta L}{\Delta t} \]

Probabilities of overall survival (A) and event-free survival (cardiovascular mortality, B) in study population according to level of PWV divided into tertiles.
PHYSIOLOGICAL AND PATHOPHYSIOLOGICAL IMPLICATIONS OF VENTRICULAR/VASCULAR COUPLING

Ascending aortic pressure

Ascending aortic flow

Coronary artery flow

Cardiovascular MRI

- Cardiac function
- Coronary perfusion

Cardiac function

Define cardiac axes

Short axis stack

Coronary artery imaging

LV volume and function, myocardial thickness, LV mass

Coronary artery imaging

MRI → X-ray angiogram

Myocardial perfusion

Myocardial perfusion

Cardiac MRI → SPECT → Angiography


Tagged MRI

Short axis stack cine image → Tagged cine image

Jiahe Xi (King's College London)
Conclusion

- Endovascular repair of the aorta causes a relative increase in aortic stiffness
- Aortic stiffness is associated with cardiovascular morbidity and mortality
- Cardiovascular MRI offers the opportunity to study this interaction
- Greater understanding of the effect of treatment and personalised care