



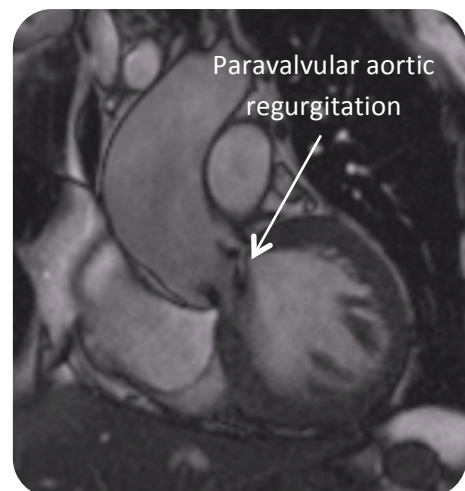
# Cardiac MRI Essentials

## Aortic valve surgery

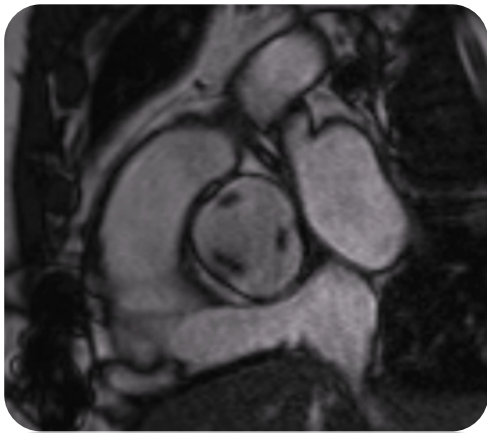
- Virtually all prosthetic heart valves are safe to scan at 1.5T
- Metallic artifact is occasionally a challenge with some valves
- CMR permits assessment of:
  - Valve anatomy and stability
  - Valve function
    - Valvular stenosis
    - Valvular regurgitation
  - Assessment of left ventricular size and function
  - Aortic dimensions

## Bioprosthetic aortic valve

- Bioprosthetic aortic valve
- LVOT view shown here
- Note jet of paravalvular aortic regurgitation
- Note also dilated ascending aorta



Warning: Not all prosthetic valves  
have been assessed for safety using 3T

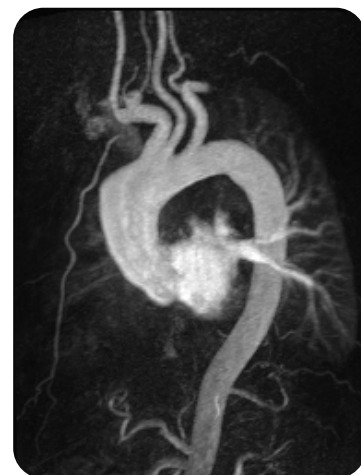


## Bioprosthetic aortic valve

- Stented porcine aortic valve replacement
- Aortic valve short axis (*en face*) view
- Note the three stents (struts) seen *en face* around the edge of the valve

## Aortic assessment

- MR angiogram of thoracic aorta (right)
- Allows measurement of aortic dimensions



## How do we use CMR to assess the aortic valve after surgery?

CMR of the aortic valve after surgery allows us to:

- Assess prosthesis stability (where appropriate)
- Assess any evidence of stenosis
- Identify and quantify any regurgitation
- Assess left ventricular size and systolic function
- Measure aortic dimensions.

## Further reading

Heart valve disease: investigation by cardiovascular magnetic resonance. *Journal of Cardiovascular Magnetic Resonance* 2012; **14**: 7 [[click here to access online](#)]