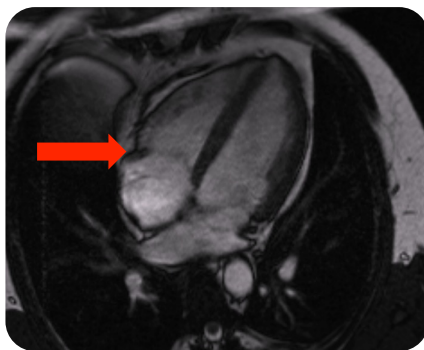


Cardiac MRI Essentials

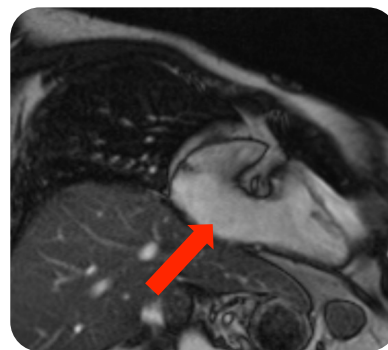
Tricuspid valve

- The normal tricuspid valve has three leaflets:
 - Anterior
 - Posterior
 - Septal
- CMR permits assesment of:
 - Anatomy of the tricuspid annulus, papillary muscles (3), and chordae
 - Tricuspid regurgitation
 - Quantification
 - Mechanism
 - Consequences
 - Tricuspid stenosis
 - Very rare

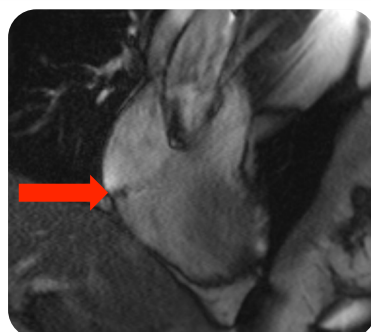
4-chamber view



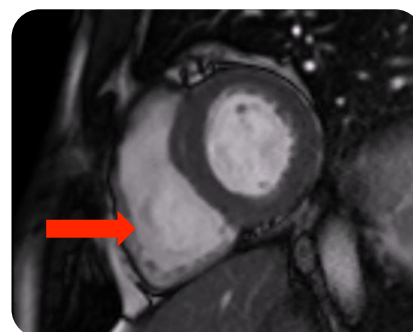
RV 2-chamber view



RV inflow-outflow view

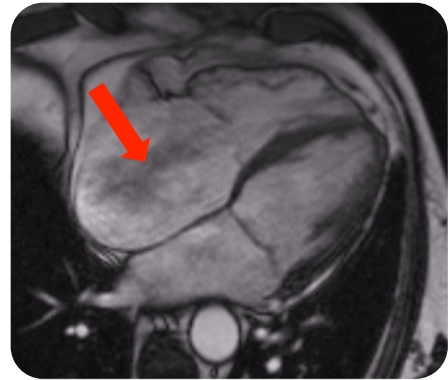


Short axis view



Tricuspid regurgitation

- 4-chamber cine CMR (still frame)
- Central jet of tricuspid regurgitation (red arrow)
- Severity assessed by quantification of regurgitant volume and fraction



Tricuspid regurgitation quantification

TR volume = RV stroke volume – pulmonary artery forward flow

$$\text{TR fraction} = \frac{\text{TR volume}}{\text{RV stroke volume}}$$

How do we assess the tricuspid valve with CMR?

CMR of the pulmonary valve allows us to:

- Assess tricuspid valve anatomy & function
 - Four-chamber view
 - Right ventricular two-chamber view
 - Right ventricular inflow-outflow view
 - Tricuspid valve short-axis view
- Quantify regurgitation
- Perform direct planimetry of tricuspid valve orifice area
- Assess right atrium and right ventricle

Further reading

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