



Constrictive Pericarditis: An AHP Guide

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Introduction

Constrictive pericarditis is a condition characterized by thickening, scarring, and sometimes calcification of the pericardium, leading to impaired diastolic filling of the heart despite preserved systolic function. It often presents as chronic right heart failure and can be caused by surgery, trauma, irradiation, or inflammation. MRI helps evaluate pericardial thickness, ventricular interaction, and associated functional impairment.

CMR Protocol

Step Sequence

Notes

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1	Anatomy (T1-weighted and T2-weighted imaging)	Evaluate pericardial thickness and tissue characteristics
2	LV and RV function	Standard cine imaging in short axis and long axis views
3	Real-time dynamic respiratory cine	Assess septal motion during respiration
4	Late gadolinium enhancement (LGE)	Identify pericardial inflammation/scarring and enhancement

Reporting Essentials

1. Dimensions & Function (indexed for BSA): LV & RV: EDV, ESV, SV and EF
2. Septal motion during normal and dynamic respiration (septal shift toward LV during inspiration)
3. Pericardial thickness: ≥ 3 mm considered abnormal
4. Presence or absence of RV diastolic collapse
5. LGE presence in pericardium, RV, and LV



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European Association of
Cardiovascular Imaging

Key Points

- Pericardial thickening, calcification, and scarring with preserved LV systolic function but impaired diastolic filling.
- Septal shift during inspiration (“ventricular interdependence”) is a typical sign.
- Constriction can be localized or diffuse and commonly leads to bi-atrial dilatation.
- Diagnosis often requires additional imaging or invasive studies.
- Causes include post-cardiac surgery/trauma, irradiation, inflammation, connective tissue disease, and idiopathic forms.
- Consider transient constriction in inflammatory states.

Tips & Tricks for Allied Health Professionals

- Constriction may be present even if pericardial thickness is normal or patchy.
- Real-time dynamic respiratory cine sequences in multiple short-axis slices and 4-chamber views improve detection of paradoxical septal motion, which may be regional.
- CMR cannot reliably detect calcification—CT may be needed for this.
- Attention to atrial size and presence of pleural effusions helps assess disease severity.

Reference:

Herzog, B. A., Greenwood, J. P., Plein, S., Garg, P., Haaf, P., & Onciul, S. (2017). Cardiovascular magnetic resonance pocket guide. *Eur Soc Cardiol*.