



Multimodality Imaging of Constrictive Pericarditis

Pericardial diseases can be evaluated with both, CT scans and MRIs. Both have their role to play depending on the situation.

When it comes to constrictive pericarditis, cardiac MRI allows us to diagnose constriction, both anatomically and functionally. The presence of biatrial dilatation with normal ventricular systolic function and leftward septal deviation in early diastole during inspiration (septal bounce - a marker of LV-RV disassociation) in the presence of pericardial thickening, allows a confident diagnosis of constrictive pericarditis (Fig. 1). CT scan however is better at evaluating the pericardium for calcification and measurement of thickness. If there is calcification (Fig. 2), usually due to tuberculosis, then the surgical plan changes accordingly.

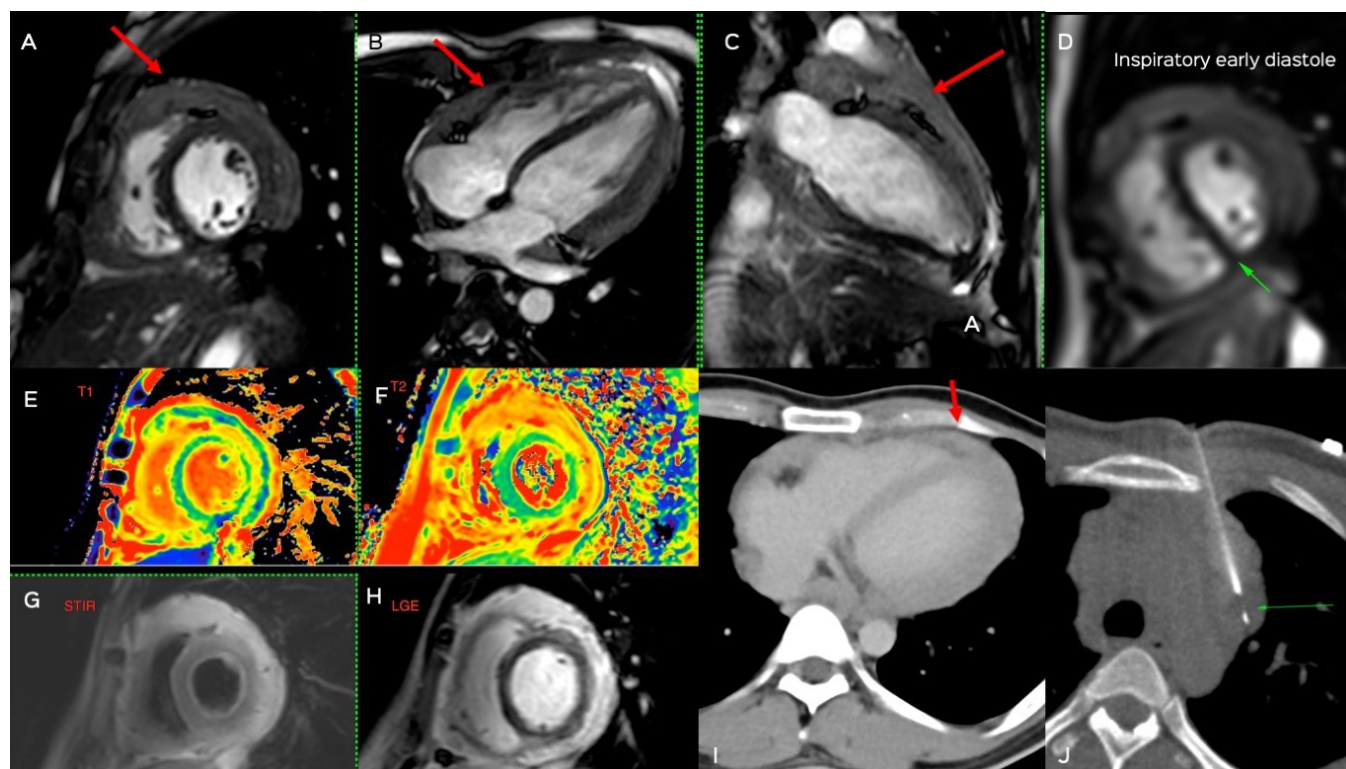


Fig 1 (A-J): 33-years old with fever and weight loss. The cine cardiac images (A – short axis, B – four chamber and C – two chamber) showed normal systolic function and mild biatrial dilatation. Marked thickening of the pericardium is noted (arrows in A, B & C). Real-time imaging (D) shows leftward septal deviation in inspiration during early diastole, a sign of RV-LV disassociation that is the hallmark of constrictive pericarditis. The T1 (E), T2 (F), STIR (G) and late gadolinium enhanced (H) images show the marked thickening of the pericardium with epicardial edema. The axial contrast CT scan (I) shows pericardial thickening without calcification. A CT guided left para-aortic node biopsy (J) confirmed the diagnosis of tuberculosis.



At a glance:

- ◆ Both MRI and CT scan can image the pericardium.
- ◆ MRI allows an anatomic and functional diagnosis of constrictive pericarditis.
- ◆ CT scan helps with further evaluation of pericardial thickening and more importantly pericardial calcification, which is tough to appreciate on MRI.

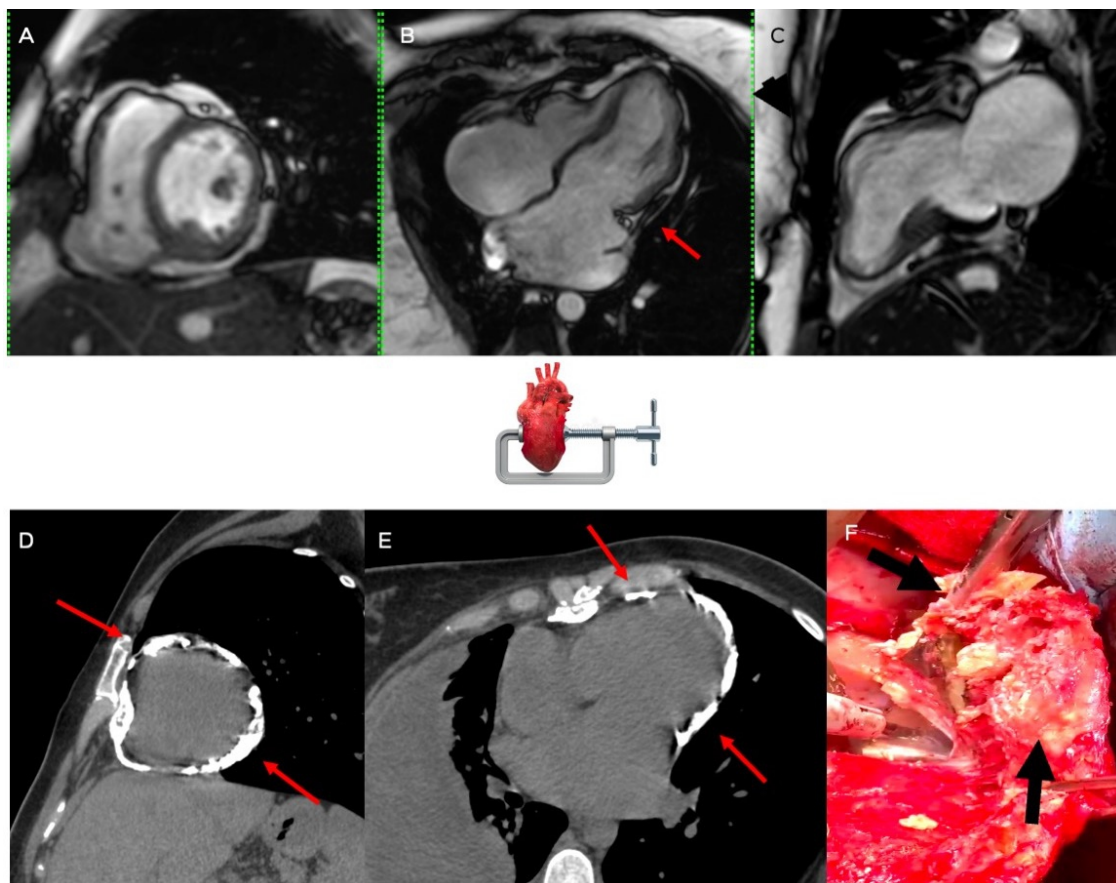


Fig 2 (A-F): 41-years old with breathlessness. The cine cardiac images (A – short axis, B – four chamber and C - two chamber) showed normal systolic function. Note the banana shaped LV and RV on the four chamber view, which suggests constriction along the basal LV. Marked thickening however is not seen. Biatrial dilatation is seen. The short axis CT scan image (D) shows circumferential chunky calcification at the level of the atrioventricular groove, encircling both ventricles from apex to base as also seen on the four chamber CT scan image (E) – this is barely appreciated on the MRI. At surgery, a thick peel of calcified pericardium was removed (arrows in F) (image courtesy Dr. Z Hamdulay). It is as if the heart is caught in a vise as depicted in the central image.

Subscribe to INNER SPACES : info@jankharia.com

Online version : <https://www.picture-this.in/inner-spaces/>

Main Clinic

383 | Bhaveshwar Vihar | Sardar V. P. Road | Prarthana Samaj | Charni Road | Mumbai 400 004 | T: 022 66173333

Cardiac, Chest & Interventional Twin Beam CT

Nishat Business Centre | Arya Bhavan | 461 | Sardar V. P. Rd | Next to Marwari Vidyalaya | Mumbai 400 004 | T: 022 6848 6666

PET / CT, Organ Optimized 3T MRI

Gr. Floor | Piramal Tower Annexe | G. K. Marg | Lower Parel | Mumbai 400 013 | T: 022 6617 4444

Owner, Printer & Publisher: Dr. Bhavin Jankharia

Published at: Dr. Jankharia's Imaging Centre Bhaveshwar Vihar, 383, S.V.P. Road, Prarthana Samaj, Charni Road, Mumbai 400 004.

Printed at: India Printing House, First Floor, 42, G D Ambedkar Marg, Opp. Wadala Post Office, Wadala, Mumbai 400 031