

# A Disguised Rhythm – Infra-Hisian Conduction Delay Mimicking Ventricular Tachycardia

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## BACKGROUND

Rate-dependent infra-hisian conduction delay (IHCD) has overlapping features with ventricular tachycardia on electrocardiogram. In order to distinguish and properly diagnose, one must use a multimodality approach to reach the proper diagnosis and treatment.

## CASE

57-year-old male with hypertension and hyperlipidemia had suspected ventricular tachycardia during outpatient nuclear stress imaging.

Cardiac magnetic resonance imaging (MRI) scan revealed a small focus of mid myocardial lateral wall delayed enhancement in the left ventricle and a mild reduction of RV function with EF of 38% as seen in A. Subsequently, myocarditis was ruled out.

Left heart catheterization showed no angiographic evidence of coronary artery disease.

Electrophysiology (EP) study revealed rate-dependent infra-hisian conduction delay with rate-dependent left bundle branch block, and 2:1 infra-his block with atrial pacing as seen in B.

## Main Finding:

It is important to go through the full due-diligence in the work-up of the etiology of ventricular tachycardia as there are masqueraders such as IHCD.



For more information:

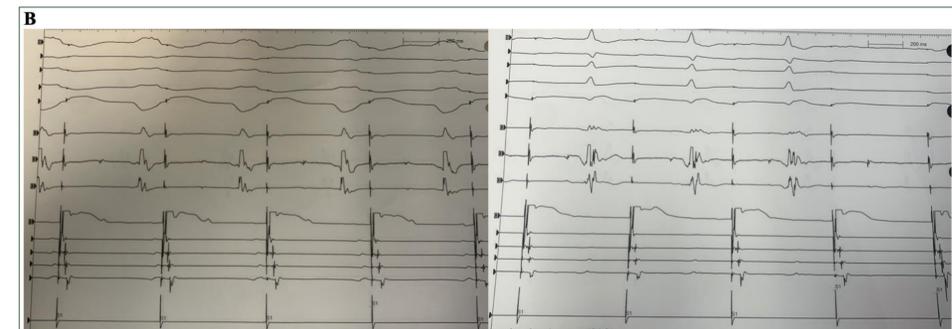
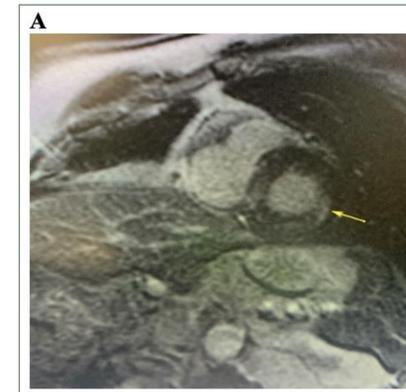
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## DECISION MAKING

IHCD in the setting of 2:1 AV Block is a class II indication for permanent pacemaker which was discovered with EP studies. Therefore, given his symptomatic rate-dependent left bundle branch block at a relatively low heart rate of 103, it was decided to proceed with a cardiac resynchronization therapy. The patient underwent a biventricular pacemaker placement with the decision for continued outpatient surveillance.

## CONCLUSION

This case highlights the importance of due-diligence in the work-up of the etiology of ventricular tachycardia as there are masqueraders such as IHCD.



A. Cardiac MRI scan revealed a small focus of mid myocardial lateral wall delayed enhancement in the left ventricle.  
B. Initial EP study revealed rate-related infra-hisian left bundle branch block and infra-hisian 2:1 block.

## DISCLOSURE INFORMATION

Authors have no disclosures.