Rapidly worsening left ventricular systolic function and in hospital ventricular fibrillation after permanent pacemaker implantation – Is there a missing link?

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A 52-year-old lady presented with recurrent syncope. Her baseline ECG is shown in Fig. 1A. Echocardiography was normal. Her detailed neurological and cardiac evaluation including coronary angiogram revealed no abnormality. After 2 months, she had a recurrence of syncope. This time ECG revealed bundle branch block and a high grade AV block (Fig. 1BC). She underwent dual chamber pacemaker implantation (Fig. 1D) but within the next 3 months she had rapid worsening heart failure (NYHA III-IV) and severe LV systolic dysfunction. She recently experienced a presyncope again. A plan for upgradation to cardiac resynchronisation therapy (CRT) was made after stabilisation. Meanwhile, she had an in-hospital ventricular fibrillation (VF) requiring immediate cardioversion (Fig. 1E). Next day, she underwent CRT-D implantation uneventfully. A PET-CT scan showed significant cardiac inflammation (Fig. 1F) and PET-avid cervical lymph nodes, biopsy from which confirmed sarcoidosis. She improved on optimal medical therapy, anti-arrhythmic drugs and steroids. There is no recurrence of VF in the last 5 months.

This case highlights the dynamic nature of ECGs in cardiac sarcoidosis and the preponderance of VF among them. Initial ECG changes can be intermittent/non-specific (1A). A subset of pacing induced cardiomyopathy can actually have underlying cardiac sarcoidosis. High index of suspicion and timely intervention can prevent fatal outcomes.
Author contributions


Research coordination and management: Subir Ghose, Ayan Kar.

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Data availability statement

All raw data during the case are available for review.

Conflict of interest

None.

Consent has been taken from patient.