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Masquerading bundle branch block

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Keywords

bundle branch block; electrocardiography; masquerading.

Description

A 73-year-old man with a history of coronary artery bypass grafting and heart failure was referred for the management of paroxysmal atrial flutter. Electrocardiography demonstrated a normal sinus rhythm, a rate of 84 beats per minute, left axis deviation (-60 degrees), and prolonged QTc interval (554 ms). The QRS duration increased up to 191 ms with an rsR' pattern in lead V1, suggesting right bundle branch block (BBB), but neither S waves in leads I and aVL nor septal Q waves in V5 and V6 were present, consistent with left BBB. Based on the simultaneous manifestation of right and left BBB on 12-lead electrocardiography, a diagnosis of masquerading BBB was made. Catheter ablation was successfully performed for paroxysmal atrial flutter, but, later, cardiac resynchronization therapy with an implantable defibrillator was administered after an episode of ventricular fibrillation.

The concept of masquerading BBB was first reported in 1954 by Richman and Wolff in four patients who exhibited left BBB in the limb leads and right BBB in the precordial leads [1]. They described this rare condition as left BBB mimicking right BBB. However, at present, the main mechanism of masquerading BBB is considered to be a type of right BBB with alteration of the QRS vectors, i.e., left anterior fascicular block [2], due to multiple causes such as coronary heart disease and cardiomyopathy [3]. Attention should be paid to this electrocardiographic sign because masquerading BBB is indicative of severe conduction system abnormalities and the presence of underlying heart diseases with a poor prognosis [4], as noted in this case.

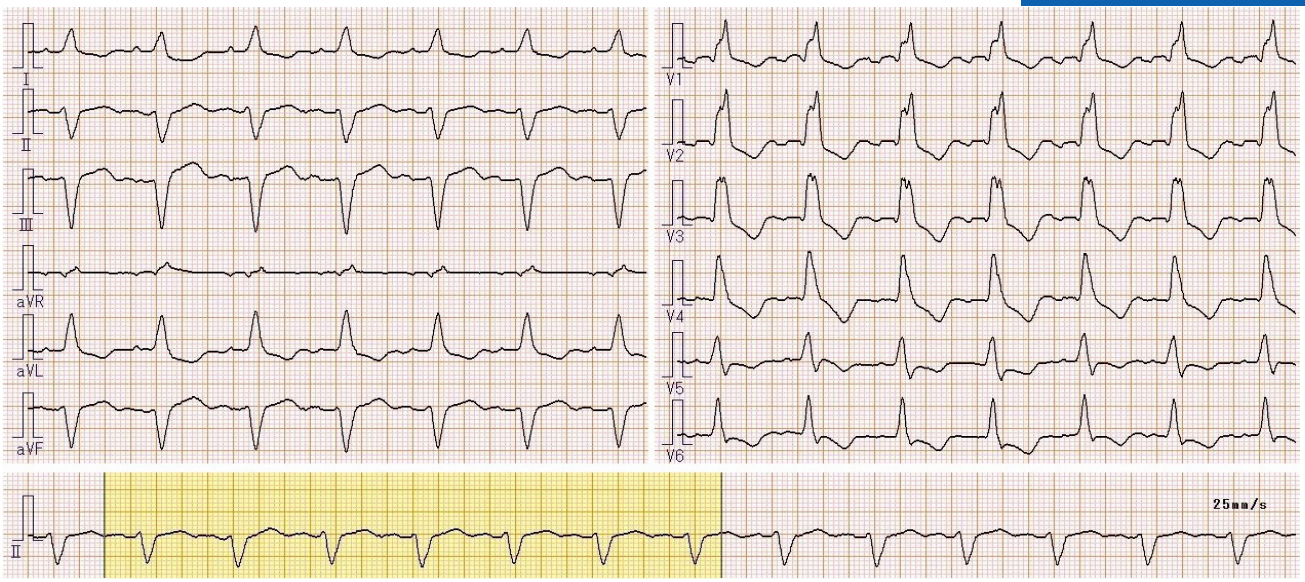

Figure 1:

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