

LETTER

Ventricular tachycardia unmasking anterior wall myocardial infarction in a patient with pre-existing left bundle branch block

Left bundle branch block (LBBB) pattern in ECG usually masks the evidence of previous myocardial infarctions (MIs).¹ Though several criteria are made to diagnose anterior wall myocardial infarction (AWMI) in patients with LBBB, these are not much helpful due to low sensitivity and specificity.² In patients with previous MI, Q waves may disappear during ventricular tachycardia (VT) as the QRS morphology changes during this arrhythmia. Here we are discussing a patient who

had previous AWMI, who presented with VT. His ECG showed reappearance of Q waves in anterior chest leads during the tachycardia, which was masked by LBBB in the baseline ECG.

A 70-year-old male presented to our emergency department with fatigue and palpitation. His pulse rate was 130/min and regular, and blood pressure was 100 systolic. His mean jugular venous pressure was elevated with intermittent cannon waves. He was not dyspnoeic. ECG showed broad QRS tachycardia with right bundle branch block (RBBB) morphology and right axis deviation (figure 1). A diagnostic possibility of VT in a patient with old MI was made in view of history of MI; tachycardia with RBBB pattern and Q waves in anterior chest leads suggest old AWMI. Since patient's vitals were stable and he had a comparatively low heart rate, amiodarone bolus followed by infusion was given. After 6 h, cardiac rhythm

reverted into sinus, which showed LBBB pattern with disappearance of Q waves in anterior leads (figure 2). Transthoracic echocardiogram showed thin akinetic ventricular septum with moderate left ventricular dysfunction.

In patients with LBBB, supraventricular tachycardia always produces LBBB morphology. In this patient, tachycardia of RBBB morphology over a pre-existing LBBB is suggestive of VT.³ In patients with previous MI, Q waves may disappear during VT as the QRS morphology changes during VT. Disappearance of negative septal vector was postulated as a mechanism for this phenomenon, as during VT, the QRS activation vector changes. Rarely, infarct Q waves can persist during VT, especially in the lateral chest leads. Reappearance of Q waves during tachycardia indicates septal origin of VT as it disappears during sinus rhythm due to LBBB.

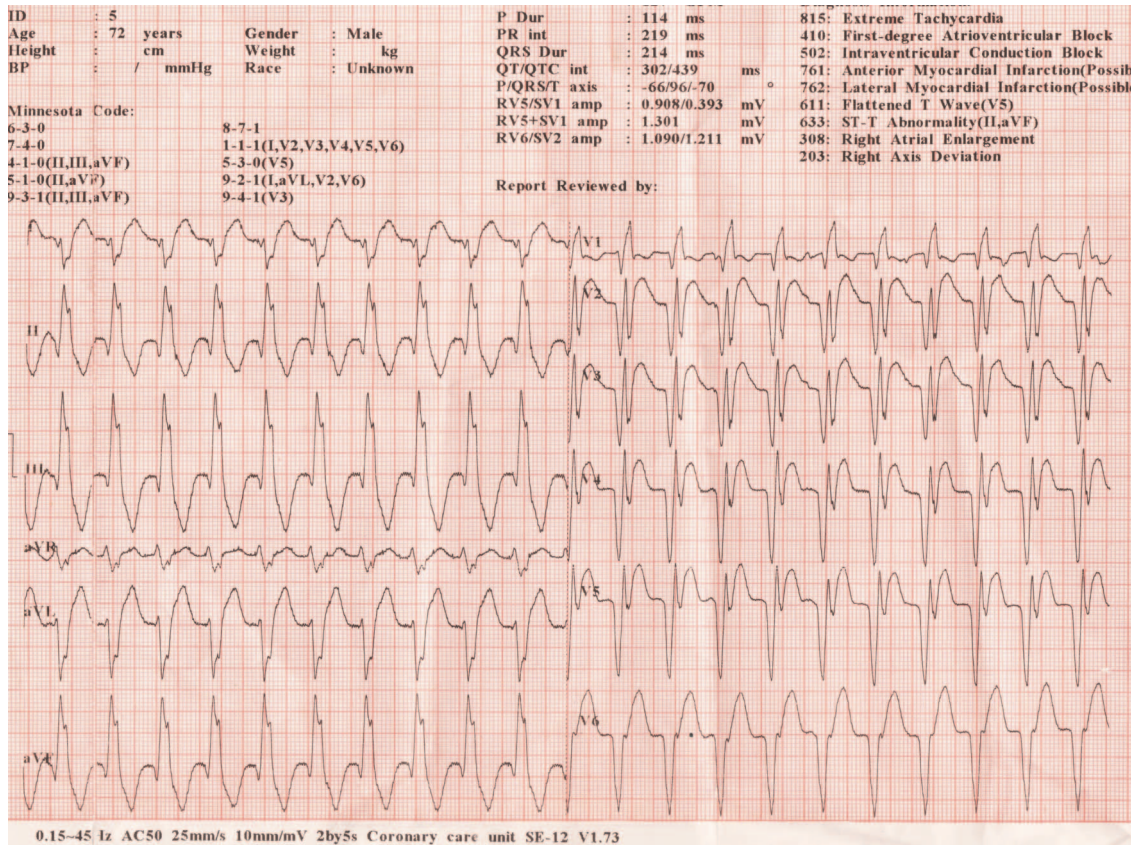


Figure 1 ECG showing broad QRS tachycardia of right bundle branch block (RBBB) pattern with right axis deviation. Prominent Q waves noted in lead V1 to V6.

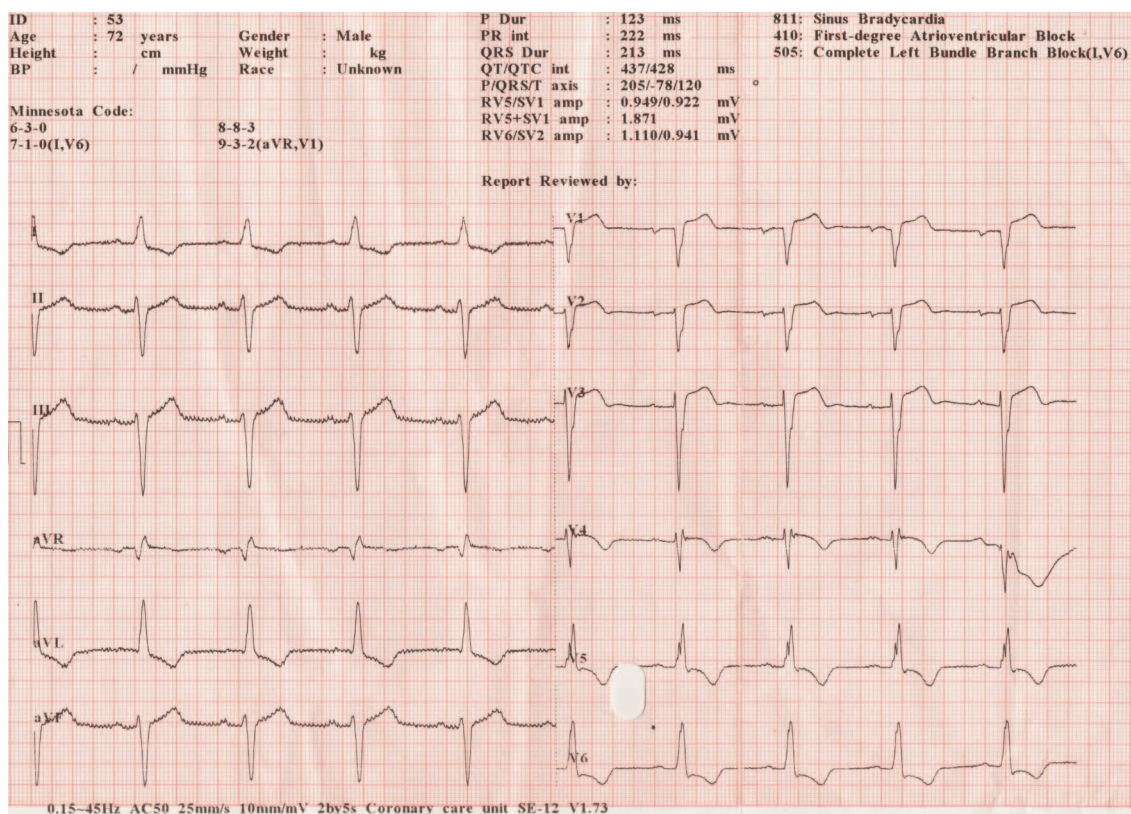


Figure 2 ECG after 6 h of admission showing sinus rhythm with left bundle branch block (LBBB) pattern with no Q waves in chest leads as evidence of previous anterior wall myocardial infarction (AWMI).

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