A 70-year-old man presented with syncope and intermittent complete heart block (CHB) associated with severe left ventricular (LV) systolic dysfunction (ejection fraction 30%). Baseline electrocardiogram (ECG) (Figure 1A) showed sinus rhythm and left bundle branch block (LBBB). A Biotronik Rivacor cardiac resynchronization therapy defibrillator was inserted with ‘AutoAdapt’ algorithm; this interrogates the A-LV and A-right ventricular (RV) conduction intervals every 60 s to determine what A-LV pacing timing is optimal for resynchronization by fusion of intrinsic conducted LBBB and LV lead pacing. Chest radiograph confirmed appropriate LV lead anatomical location in posterolateral branch. Cardiac resynchronization therapy defibrillator interrogation demonstrated satisfactory function of all three leads and device. The following day, the patient became profoundly diaphoretic and presyncopal. Clinical examination revealed he was normotensive, with a slow and irregular pulse, albeit with a regular QRS evident on telemetry (Figure 1B). Telemetry and 12-lead ECG (Figure 1C) showed two different QRS morphologies consistent with (i) LV only pacing (red arrow) and (ii) appropriate fusion of LV pacing and conducted LBBB (blue arrow) for optimal resynchronization. Symptoms immediately resolved when AutoAdapt was deactivated in favour of continuous biventricular pacing with fixed atrioventricular (AV) delay (Figure 1D); pacing programming was changed to DDD (60/130) with AV delay 170 ms and LV 5 ms prior to RV pacing. This behaviour is explained by AutoAdapt functioning: biventricular pacing occurs for 60 s if the assessed beat shows AV block (AV > 300 ms); continuous LV only pacing with a fixed A-LV delay occurs for 60 s if intrinsic LBBB is detected. This means individuals with intermittent CHB programmed with AutoAdapt are at risk of LV only pacing for up to 60 s, which maximizes detrimental LV dyssynchrony potentially causing profound haemodynamic sequelae in patients with pre-existing systolic dysfunction.

Consent: The authors confirm that written consent for submission and publication of this case report including images and associated text has been obtained from the patient in line with COPE guidance.

Funding: None declared.
Figure 1  (A) Twelve-lead electrocardiogram of intrinsic left bundle branch block. (B and C) Telemetry and 12-lead electrocardiogram illustrating two different QRS morphologies: left ventricular only pacing (red arrow); appropriate fusion of left ventricular pacing and conducted left bundle branch block for optimal resynchronization (blue arrow). (D) Twelve-lead electrocardiogram post-cardiac resynchronization therapy pacing programming change to biventricular pacing.