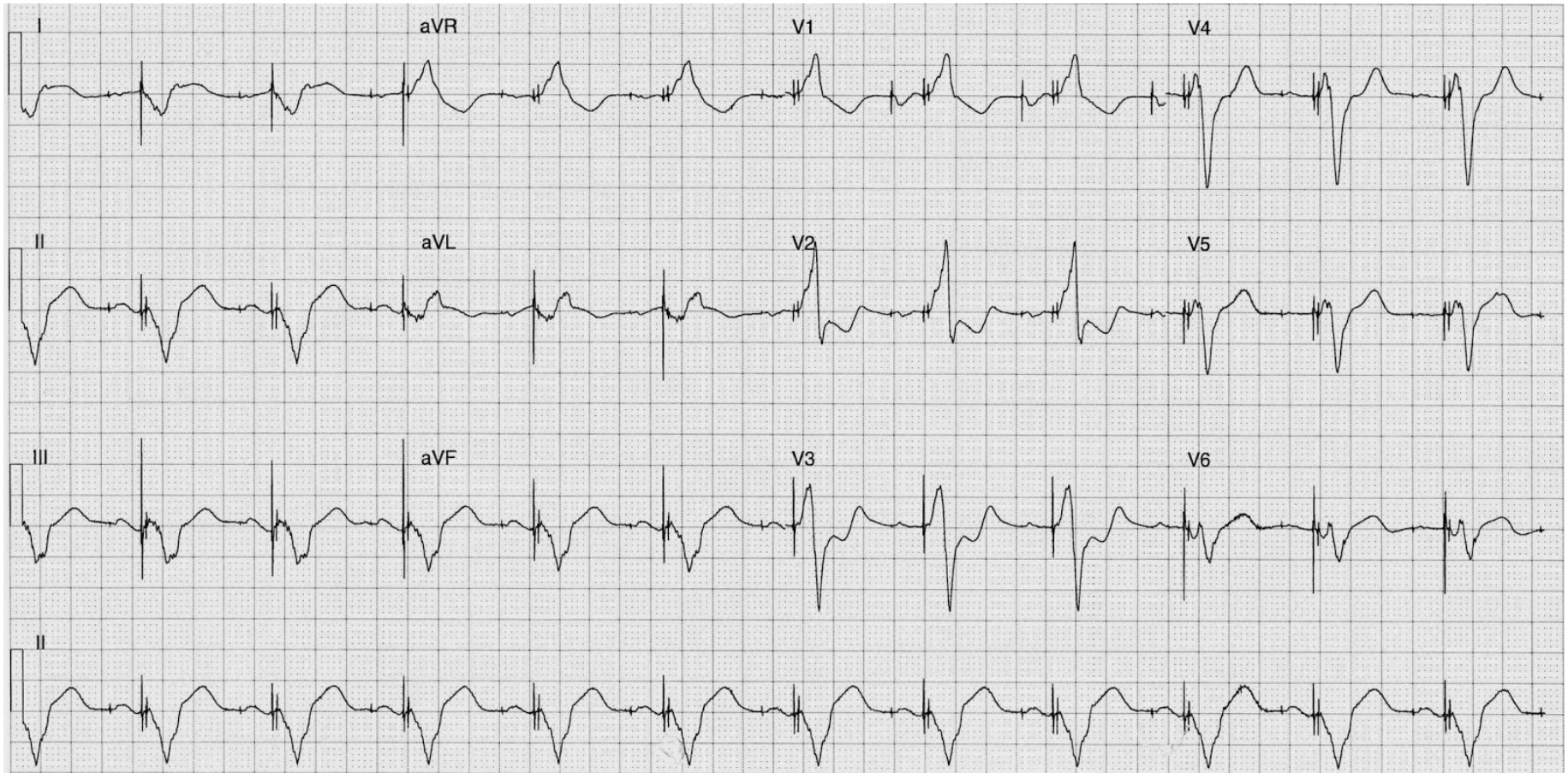


- Biventricular pacing or cardiac resynchronization therapy (Bi-V, or CRT)



- Pacing occurs simultaneously from both right and left ventricular (RV, LV) leads. A pacing stimulus triggers ventricular depolarization, which gives rise to the characteristic QRS morphology of the BiV-paced complexes:

- *Lead I*: A monophasic negative (Q or QS complex) or biphasic complex (QR complex) in lead I is the single best criterion for detecting BiV pacing, with a sensitivity and specificity of about 90%

In contrast to BiV pacing, monoventricular RV apical pacing typically manifests an initial R wave in leads I and aVL.

- *Lead V1*: A dominant R or rS wave (positive deflection) in lead V1

In contrast to BiV pacing, monoventricular RV apical pacing manifests the typical LBBB-like pattern with a negative deflection in lead V1.

- Two closely spaced pacing artifacts are sometimes visible preceding the QRS complex in one or more of the ECG leads with the interval between the spikes being extremely short (a few msec)

Atrial pacing may or may not be present with normal BiV pacing. With a BiV pacemaker, ventricular pacing is generally present throughout the tracing so as to maximize the hemodynamic benefit conferred by resynchronizing the right and left ventricular myocardial contractions.

The LV pacing lead is placed in the coronary sinus venous system to pace the LV from a lateral or posterolateral site. The RV pacing lead is usually in the RV apex.

The width of the QRS complex is widened but the duration is variable depending on the relative position of the RV and LV pacing leads and the delay or “offset” between the initiation of pacing in the RV versus the LV.