

Clinical Image

T-wave Inversion after a Pacemaker Implantation

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An 80-year-old female was implanted with dual chamber pacemaker due to symptomatic sick sinus syndrome. Her pre-operative ECG showed complete right bundle-branch block with T-Wave Inversion (TWI) only at V1-3 leads. (A) Her ECG showed

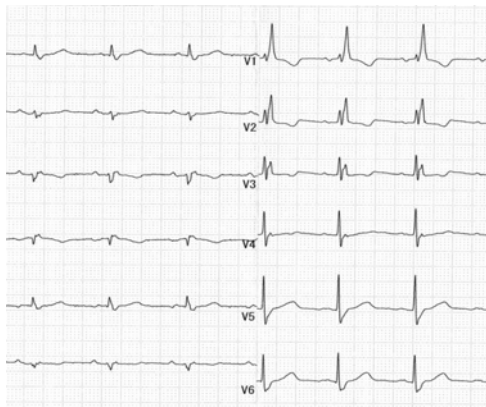


Figure A: Her ECG showed global T-wave inversion one week after pacemaker implantation.

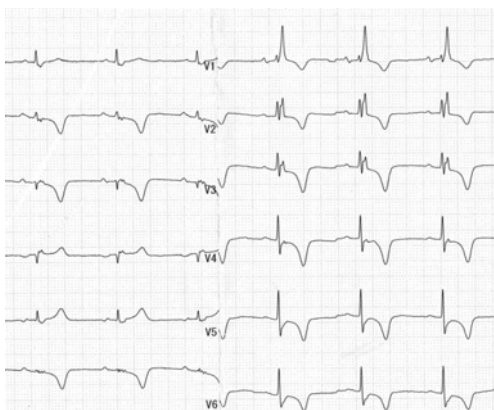


Figure B: The patient was asymptomatic and echocardiography revealed no evidence of myocardial ischemia.

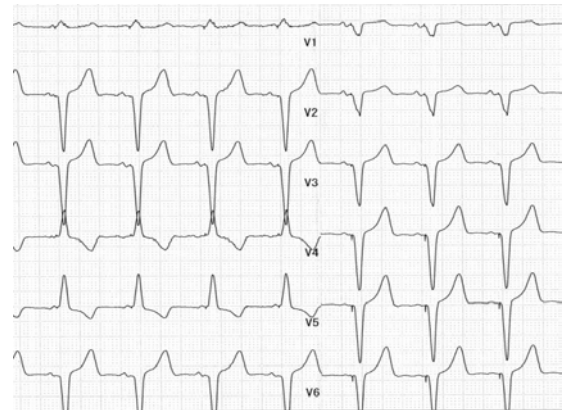


Figure C: The direction of TWI was consistent with that of paced QRS-complex (B, C) and disappeared one month later.

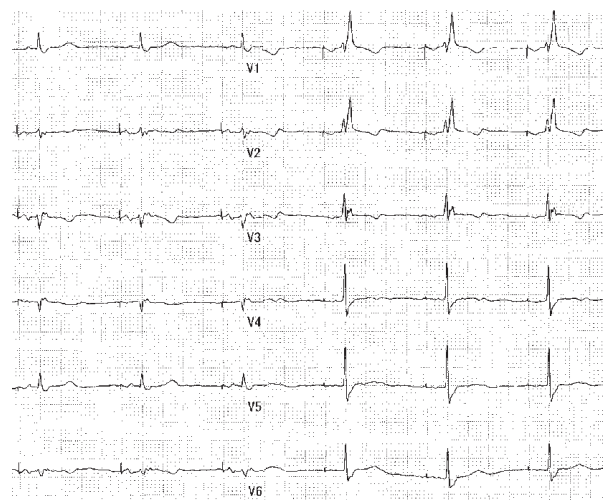


Figure D: Clinicians should rule out myocardial ischemia when TWI develops but need to aware of this curious phenomenon to prevent unnecessary examination for differential diagnosis.

global T-wave inversion one week after pacemaker implantation (B). The patient was asymptomatic and echocardiography revealed no evidence of myocardial ischemia.

Cardiac memory has been known for many years [1]. It is a unique phenomenon of electrical remodeling following periods of abnormal ventricular activation including ventricular pacing, intermittent left bundle-branch block, and pre-excitation due to WPW syndrome [2]. This patient was performed ventricular pacing by short A-V interval for several days after pacemaker implantation. (C) The direction of TWI was consistent with that of paced QRS-complex (B, C) and disappeared one month later (D). Clinicians should rule out myocardial ischemia when TWI develops but need to aware of this curious phenomenon to prevent unnecessary examination for differential diagnosis.

References

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2. Rosenbaum MB, Blanco HH, Elizari MV, Lazzari JO, Davidenko JM. Electrotonic modulation of the T wave and cardiac memory. *Am J Cardiol*. 1982 Aug; 50: 213-222.