Cardiology

Spontaneous T wave inversion after ventricular pacing: What is the probable mechanism?

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Answers on p e21

An 85 year old man with a history of hypertension and no known cardiac disorder was admitted because of recent onset dizziness, effort intolerance, and dyspnoea. A 12 lead surface electrocardiogram (ECG) taken on admission showed 2:1 second degree atrioventricular block with a rate of 40 beats/min. QRS complexes were narrow and T waves were upright in all leads. C reactive protein and serum troponin I

concentrations taken 12 hours apart were normal. Subsequently, a temporary transvenous pacemaker lead was placed in the right ventricular apex because of low blood pressure (90/60 mm Hg) and heart rate (40 beats/min). Capture threshold was within the acceptable range. The temporary pacemaker was programmed to VVI mode and a lower rate of 70 beats/min (fig 1). After a few days of continuous pacing, it was turned

off and the patient's own rhythm resumed (fig 2).

QUESTIONS

- (1) Describe the ECG (fig 2).
- (2) What is the probable mechanism responsible for the newly developed abnormalities in the ECG (fig 2)?

Postgrad Med J 2006;**82**:e20
(<http://www.postgradmedj.com/cgi/content/full/82/970/e20>)
doi: 10.1136/pgmj.2006.047217

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Submitted 27 February 2006
Accepted 3 March 2006

Conflicts of interest: none.

Figure 1 Precordial leads showing right ventricular pacing at a rate of 70 beats/min.

Figure 2 Precordial leads showing the patient's underlying heart rhythm immediately after the pacemaker was turned off.