



University of  
Ottawa Heart Institute

# ECG of the Month

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## Fast-Paced!

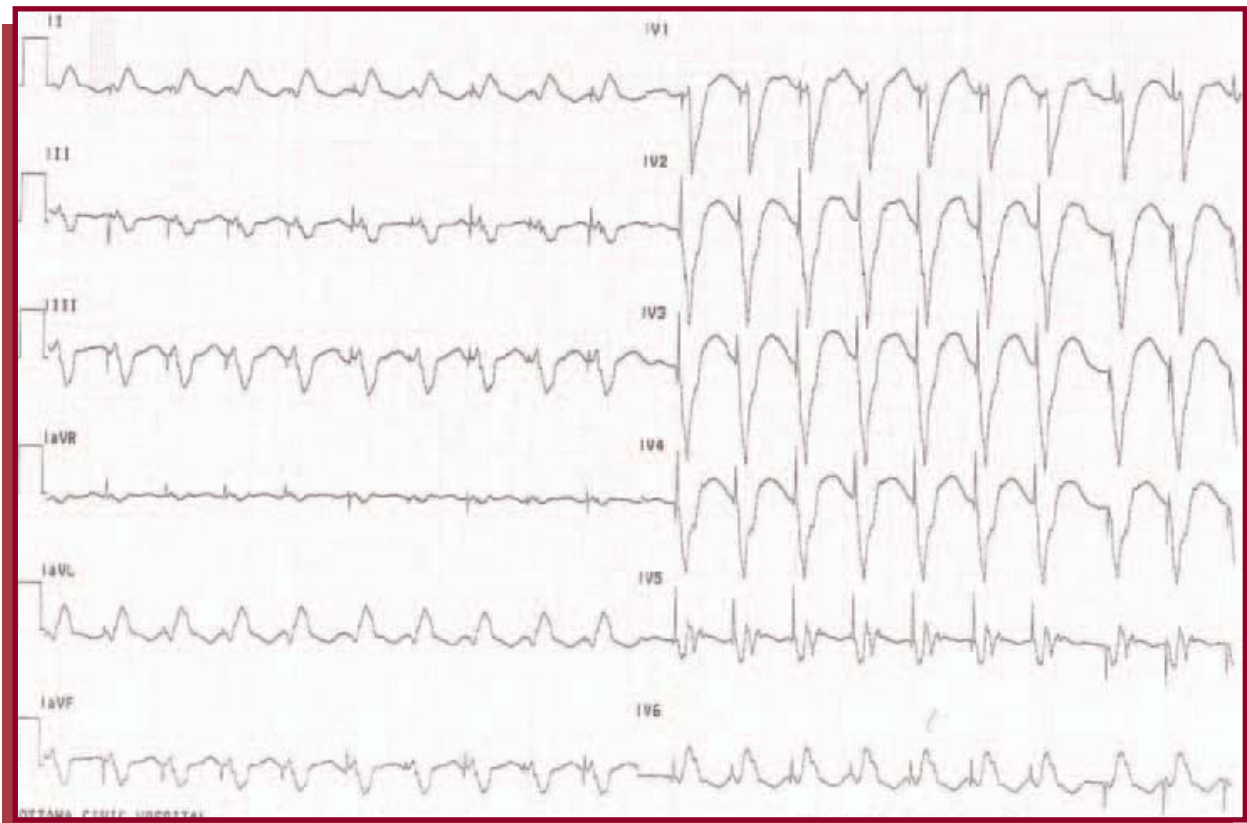
This ECG was recorded from a 77-year-old man with previous myocardial infarction and an implantable defibrillator, who presented with palpitations.

*What is the diagnosis?* \_\_\_\_\_

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### This Month's ECG Diagnosis

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This ECG shows ventricular pacing at a rapid rate. The pacing is also slightly irregular, with the shortest paced intervals at 500 msec. However, there is no organised atrial activity visible.


Rapid ventricular pacing is slightly irregular in the absence of organised atrial activity. This is typical for ventricular pacing tracking atrial fibrillation (AF).

In this case, the shortest R-R intervals are limited by the upper rate of the pacemaker (120 beats per minute). This patient had a dual chamber defibrillator, which was capable of tracking atrial rhythm. When he went into AF, the device continued to track the atrial rhythm and paced at, or near, the programmed upper rate. This is a normal

response for the device, although certainly quite abnormal for the patient.

On interrogation of the device, one can see rapid, irregular atrial activations. The irregularity in ventricular pacing is related to both the upper rate behaviour of the device, and the slightly irregular atrial sensing.

It should be noted that the rapid ventricular response is caused by AF and by the sensing from the dual chamber device. To slow the heart rate, pharmacologic atrioventricular nodal blockade would have no effect, as the fast heart rate is due to pacing.

The measures to control heart rate would include either cardioversion or reprogramming the dual chamber device. 



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It's been called an "insidious fog"... and "sailing into the dark"... Alzheimer Disease affects the brain, erases memory and eventually takes life itself.

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Alzheimer Society

