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ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Electrocardiogram Quiz – Case 5

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ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2012, 29(3):384–385

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An 86-year-old male presented to the emergency department of our hospital with a history consistent with exertional dyspnea and edema of lower extremities. The patient's personal history included ischemic cardiomyopathy with a series of hospitalizations in our Department during the last 5 years. He was hemodynamically stable with a blood pressure of 110/60 mmHg, oxygen saturation 97%, respiratory rate 16 breaths/min and normal body temperature. The patient was admitted to the hospital for further investigation and treatment tune-up. The laboratory tests, including a complete set of cardiac biomarkers were within normal limits. The ECG on admission is shown below (fig. 1).

Questions

a. What is the basic rhythm?
b. Which further exams and treatment would you suggest?

Comment

The patient had been implanted a DDD pacemaker since 4 years as a treatment of an atrioventricular heart block. The depicted ECG is suggestive of atrioventricular sequential paced rhythm with an underlying atrial fibrillation (AF). The proposed mechanism of pacemaker stimulation coexisting with AF suggests irritation of the atrial rhythm by retrograde conduction.

Electrocardiographic recognition of the underlying rhythm in patients with either atrioventricular or ventricular pacing can be

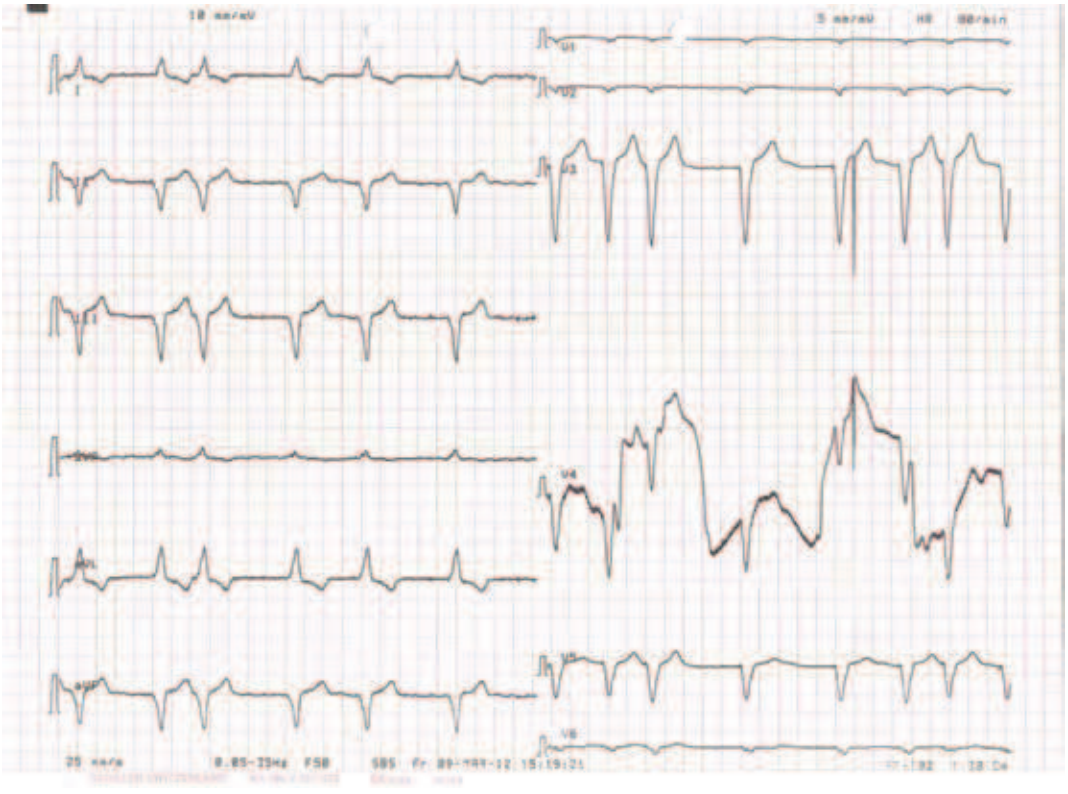

Figure 1

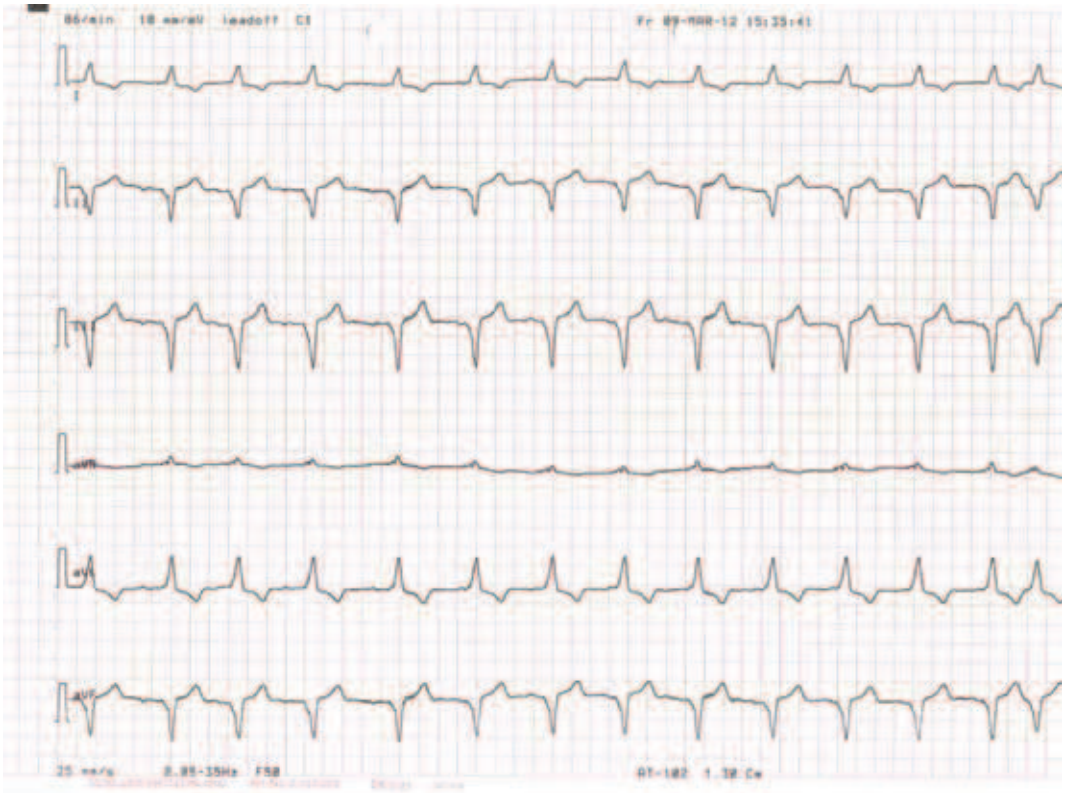

Figure 2

difficult. AF in particular may go unreported. Failure to identify AF in the continuously paced patients, even by experienced cardiologists, may have been due to a series of factors, namely: lack of irregularity of the paced rhythm, inability to make the diagnosis based on presence of fibrillatory waves or absence of P waves alone or the inappropriate conclusion by the reader that the underlying rhythm did not require documentation.

Furthermore, several studies have shown that the lower rate of identification of underlying AF in paced patients leads to a lower rate of anticoagulation treatment. Actually, there are no studies demonstrating a direct correlation between an excess risk of cerebrovascular accidents in paced patients with underdiagnosed concomitant AF. However, it is widely believed that there is every reason to anticipate an eventual high incidence of thromboembolic events in this group of patients.

AF, if discovered, must be documented and patients treated according to currently accepted guidelines for anticoagulation.

Our patient had undergone a transesophageal echocardiogram, for the exclusion of intracardiac thrombus presence, followed by direct current cardioversion of his AF to sinus rhythm (fig. 2) and he was discharged with explicit instructions for reassessment and coumarine anticoagulation.

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Diagnosis: *Paced rhythm with underlying atrial fibrillation*