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Electrocardiogram Quiz – Case 41

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A 65-year-old man presented to the emergency department of our hospital complaining of recent onset fatigue and breathlessness. The patient's medical history included arterial hypertension under treatment. He was hemodynamically stable with normal vital signs. The initial 12-lead surface electrocardiogram (ECG) is depicted below.

Comment

Non-compaction cardiomyopathy (NCCM) is a primary myocardial disorder characterized by excessive and prominent trabeculations associated with deep recesses that communicate with the ventricular cavities but not the coronary circulation. Patients with NCCM can

Questions

- What abnormal ECG findings are present?
- What is the differential diagnosis?

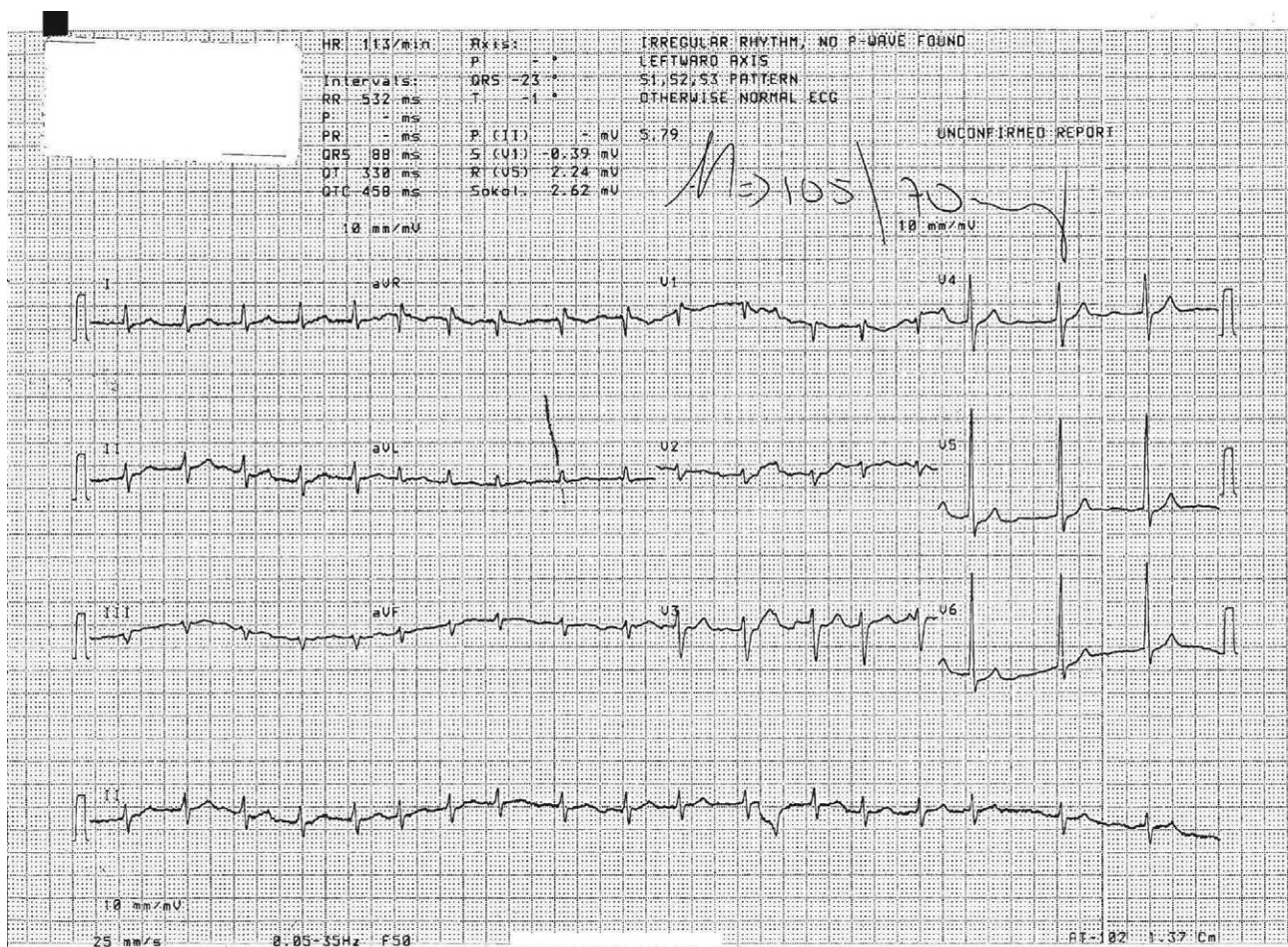


Figure 1

present with a wide clinical spectrum varying from coincidental discovery in asymptomatic patients to severe heart failure. Depending on the initial presentation, the natural history of the disease in symptomatic patients is poor.

The diagnosis of NCCM is usually made by echocardiography, as in the case of our patient. However, other imaging modalities such as cardiac magnetic resonance (CMR) imaging, positron emission tomography (PET), computed tomography (CT) and left ventriculography may diagnose or confirm the clinical suspicion. The differential diagnoses of NCCM include: hypertrophic cardiomyopathy, localized left ventricular (LV) hypertrophy, dilated cardiomyopathy, endocardial fibroelastosis, myopericarditis, restrictive cardiomyopathy, LV thrombi, aberrant chordae tendineae, intramyocardial hematoma/abscess, and cardiac metastases.

The most common ECG findings are intraventricular conduction delay (especially left bundle branch block [LBBB]), voltage signs of LV hypertrophy, and repolarization abnormalities. An entirely normal ECG, especially in the initial stages of the disease, is usually present in approximately 13% of patients. There are no ECG findings or patterns that are specific for NCCM. Commonly, there is an overlap among the presence of intraventricular conduction delay, atrial conduc-

tion delay (PR interval prolongation or atrioventricular block), and prolongation of the QTc interval in the presence of reduced systolic LV function and LV/left atrial dilation. Moreover, patients with ECG voltage signs of LV hypertrophy more often present with, or have a history of, systemic embolic events.

References

1. ARBUSTINI E, FAVALLI V, NARULA N, SERIO A, GRASSO M. Left ventricular noncompaction: A distinct genetic cardiomyopathy? *J Am Coll Cardiol* 2016, 68:949–966
2. STEFFEL J, KOBZA R, OECHSLIN E, JENNI R, DURU F. Electrocardiographic characteristics at initial diagnosis in patients with isolated left ventricular noncompaction. *Am J Cardiol* 2009, 104:984–989

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