

QUIZ

The EKG Quiz: “New and Old!”**Fathi Idris Ali¹, Yousef Darrat², Khalid Abozguia³**

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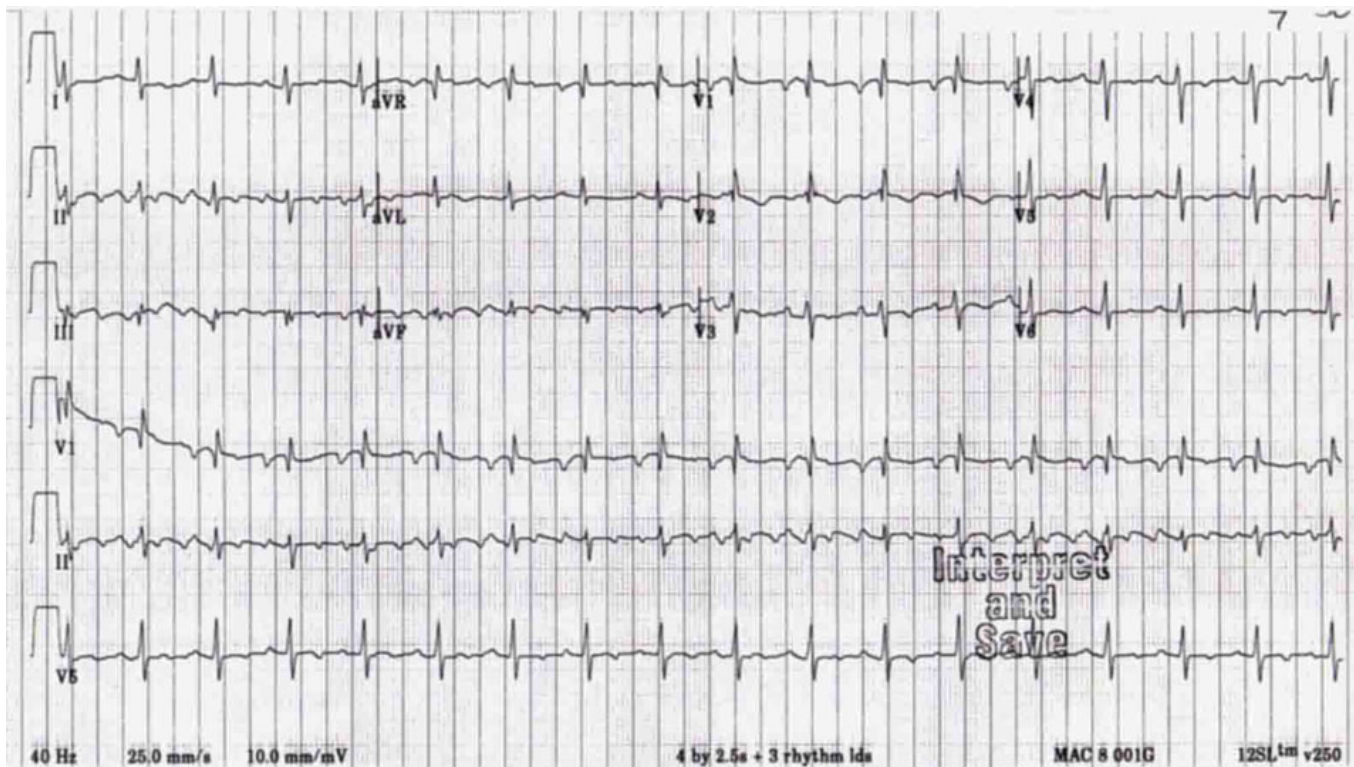
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History

This EKG was done for a 62-year-old man who underwent a recent cardiac surgery (Figure 1).

**Figure 1.** The patient’s EKG; please examine all the leads carefully and answer the question below before you proceed.**Questions**

What is the rhythm?

A. Normal sinus rhythm

B. Atrial flutter

C. Both of the above

D. Atrial fibrillation

Answer: C

Discussion

The rhythm is regular with a narrow QRS complex at a rate of about 100 bpm. These QRS complexes are preceded by a well-discernible atrial activity with a fixed PR interval which is best seen in the lead V1. However, inferior leads (II, III and aVF) reveal other atrial activities characteristic of atrial flutter (clear saw tooth pattern with an atrial rate of about 300 bpm).

This flutter activity does not seem to drive the ventricle and can be seen superimposed on the regular atrial activities with variable degrees of fusion between both atria (best seen in the rhythm strip at the bottom).

This pattern of two "independent" sets of atrial activities can be seen in patients who receive heart transplantation, which was the case in this patient.

This is because the old atrium (i.e. the recipient atrium) or a major part of it, is left in place and the new atria are sutured to it. Knowing that part of the "atrium" is fluttering, use of anti-coagulation may be considered. Another finding in this EKG is the "incomplete RBBB" which is not uncommonly seen, for unknown reasons, in transplanted hearts.

Learning point

Atrial activities should be carefully analyzed in several leads.

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