

Ultra-short episodes of atrial fibrillation

*Corresponding Author: **Oleksii Skakun***

Tel: +380502293269; Email: olexiy109921@ukr.net

Oleksii Skakun*

Cardiological Department, St Luke's Clinic, Ivano-Frankivsk, Ukraine.

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Description

Atrial fibrillation is a rhythm abnormality characterized by disorganized atrial activity, seen as f-waves on the ECG. It's a well-known cause of heart failure and ischemic stroke, furthermore strokes associated with atrial fibrillation tend to be more severe and disabling [1]. Episodes of atrial fibrillation are often asymptomatic or mildly symptomatic, and patients frequently do not seek medical attention after the first episode [2]. Sometimes, only very short episodes of atrial fibrillation are registered. The case of "ultra-short" episodes of atrial fibrillation detected with ambulatory ECG monitoring is presented.

A 69-year-old man presented to his physician with recurrent episodes of irregular heartbeat. The ECG showed normal sinus rhythm. Ambulatory 12-lead ECG monitoring was performed. One symptomatic prolonged episode of atrial fibrillation lasting 1 hour and 7 minutes (Figure 1) and 36 short episodes of atrial fibrillation lasting less than 1 minute were detected. Most episodes lasted less than 10 seconds (Figures 2-5). The shortest episode lasted 2.6 seconds.

Episodes of atrial fibrillation may vary in duration. Frederiksson T. et al. (2020) called brief episodes of rapid irregular atrial activity "micro-atrial fibrillation" [3]. They defined it as an irregular tachycardia with sudden onset and ≥ 5 consecutive supraventricular beats without P waves lasting less than 30 s [3].

We present short episodes of disorganized rapid atrial activity lasting less than 10 seconds. Such short episodes of atrial fibrillation should be carefully distinguished from artifacts. RR-interval irregularity in the presence of f-waves and in the absence of obvious artifacts should raise the suspicion of a short episode of atrial fibrillation.

Therefore, clinicians should be aware of short episodes of atrial fibrillation. Their presence should always raise the suspicion of long episodes of atrial fibrillation and may have a significant impact on management and outcome.

References

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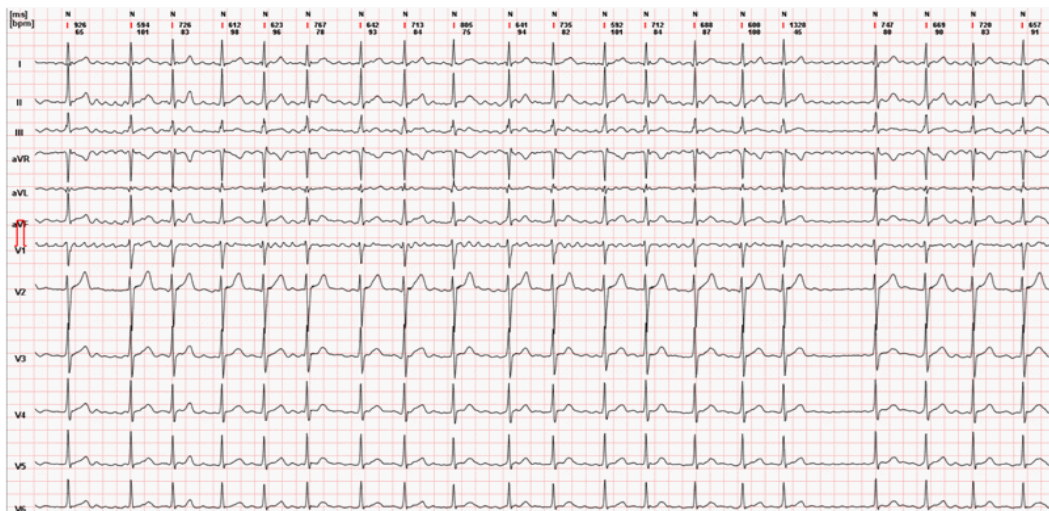


Figure 1: Fragment of 12-lead ambulatory ECG monitoring. Long episode of atrial fibrillation.

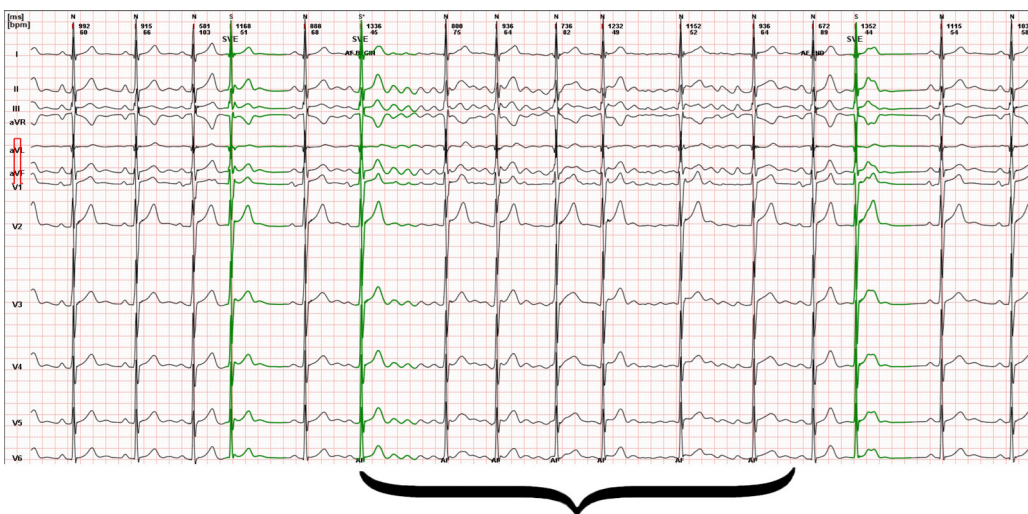


Figure 2: Fragment of 12-lead ambulatory ECG monitoring. Short episode of atrial fibrillation lasting 6.2 seconds. A brief episode of atrial fibrillation is indicated by the bracketed area. Premature atrial contractions are green.

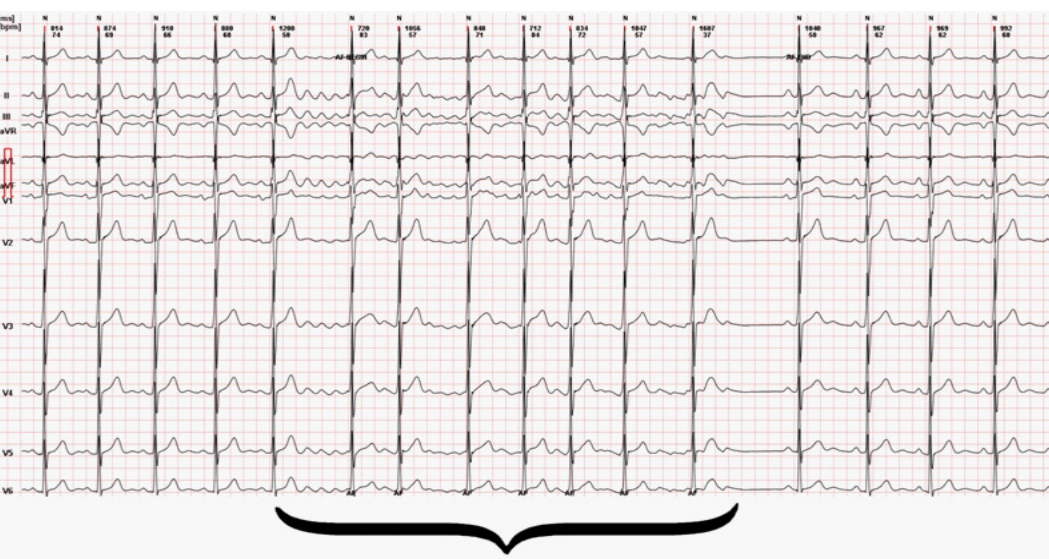


Figure 3: Fragment of 12-lead ambulatory ECG monitoring. Short episode of atrial fibrillation lasting 6.6 seconds. A brief episode of atrial fibrillation is indicated by the bracketed area.

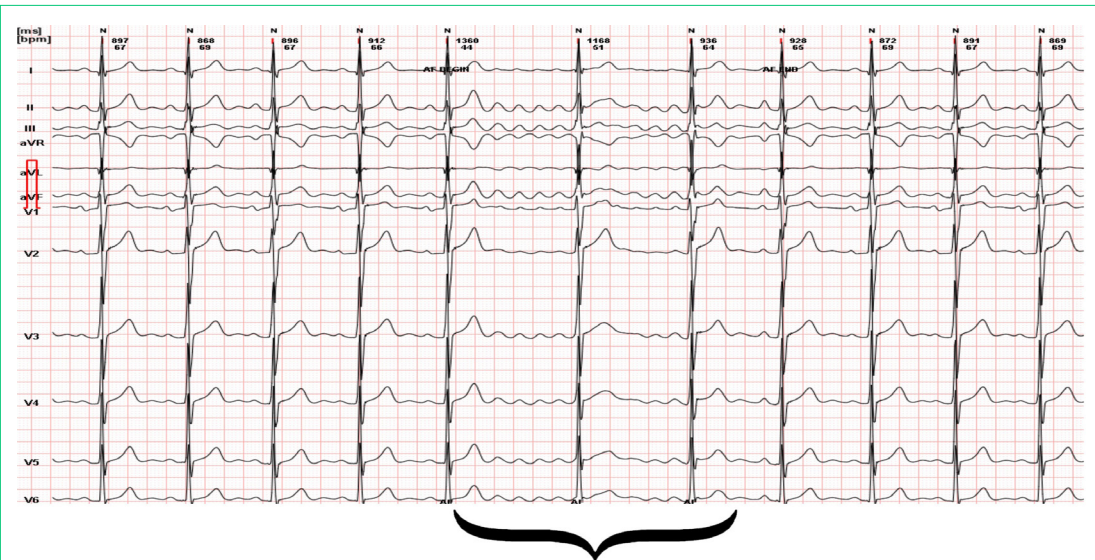


Figure 4: Fragment of 12-lead ambulatory ECG monitoring. Short episode of atrial fibrillation lasting 2.6 seconds. A brief episode of atrial fibrillation is indicated by the bracketed area.

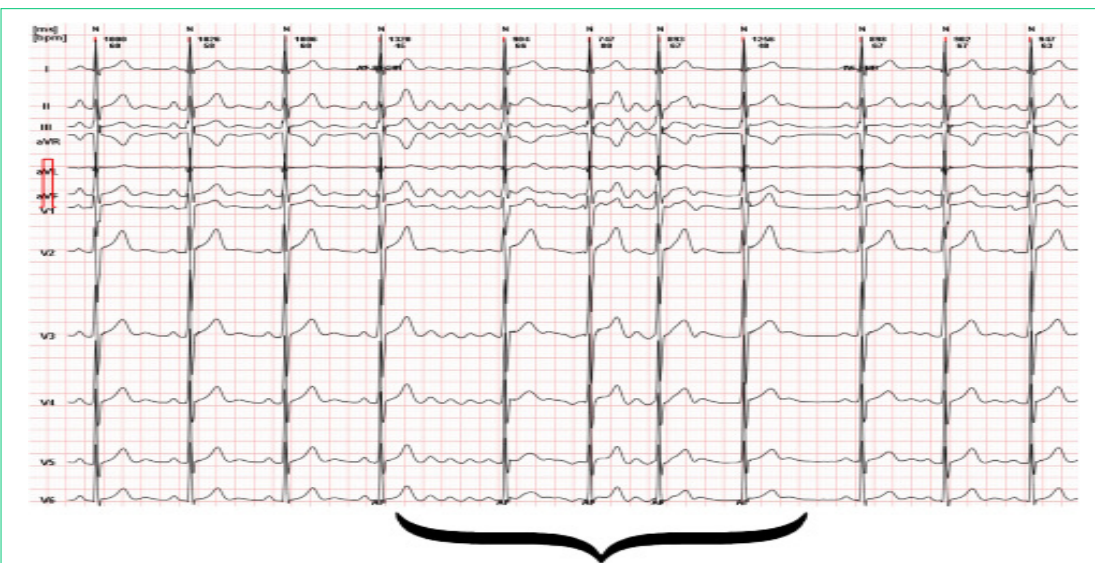


Figure 5: Fragment of 12-lead ambulatory ECG monitoring. Short episode of atrial fibrillation lasting approximately 4 seconds. A brief episode of atrial fibrillation is indicated by the bracketed area.