

Images in clinical medicine



An electrocardiography (ECG) artefact: pseudo-atrial flutter

 Craig Corbett, Thadathilankal-Jess John

Corresponding author: Craig Corbett, Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University and Tygerberg Hospital, Cape Town, South Africa. craigcorbettsa@gmail.com

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An electrocardiography (ECG) artefact: pseudo-atrial flutter

Craig Corbett^{1,&}, Thadathilankal-Jess John¹

¹Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University and Tygerberg Hospital, Cape Town, South Africa

[&]Corresponding author

Craig Corbett, Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University and Tygerberg Hospital, Cape Town, South Africa

Image in medicine

A 58-year-old gentleman was referred to the emergency department with an apparent atrial flutter on electrocardiography (ECG) (A). The clinician noted the lack of flutter waves in the precordial leads, as well as lead II. This ECG illustrates pseudo-atrial flutter due to a pill-rolling Parkinsonian tremor on the left side. General clinicians are frequently confronted with ECG artifacts, in which patterns are seen that are not caused by cardiac electrical activity. Parkinson's disease and the characteristic tremor thereof can be one such mimicker. Furthermore, its typical 4-6Hz tremor frequency may simulate the 300 beats per minute frequency of classic "F" waves of atrial flutter with a sawtooth pattern. On this ECG,

minimal pseudo-flutter waves are seen in the precordial leads in comparison to the limb leads, as the precordial leads are located further away from the left arm. Moreover, the absence of pseudo-flutter waves in lead II (voltage difference between the left leg and the less affected right arm) should alert the clinician to the possibility of

the ECG changes being related to the artifact. Placing the electrodes at the origin of the limbs attenuates the myopotentials that lead to this phenomenon. This ECG highlights the importance of the interpretation of ECGs in correlation with the clinical context.

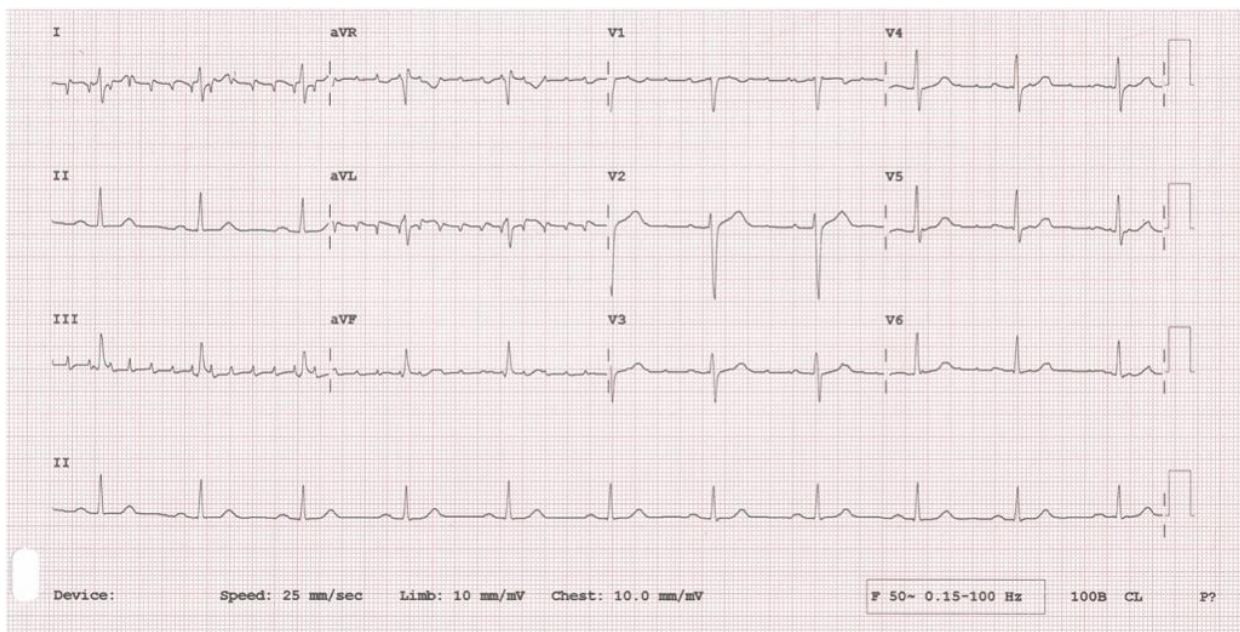


Figure 1: pseudo-atrial flutter of Parkinson's disease