FBI (Fast Broad Irregular): A Case for the Secret Service?
Sergio Richter and Pedro Brugada
Circulation 2006;114;638-639
DOI: 10.1161/CIRCULATIONAHA.106.641746

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circ.ahajournals.org/cgi/content/full/114/24/e638
A 34-year-old man without a medical history of cardiac disease presented to our emergency room with fast and irregular palpitations. An instantaneously recorded surface ECG revealed the diagnosis (Figure). The tracing showed an irregular, wide QRS-complex tachycardia with right bundle-branch block, right superior axis deviation, and short RR intervals varying from 160 to 340 ms. The widths of the right bundle-branch block–shaped QRS complexes varied in response to changes in ventricular cycle length. A narrow QRS complex with normal axis was observed (Figure, asterisk), indicating a normally conducted capture beat.

This grossly irregular, rapid right bundle-branch block tachycardia represented preexcited atrial fibrillation (AF) with anterograde conduction over a left posterolateral accessory pathway, leading to irregularly irregular preexcited ventricular complexes with varying degrees of preexcitation. The shortest RR interval during preexcited AF was 160 ms, indicating a short anterograde refractory period of the accessory pathway and an increased risk for the development of ventricular fibrillation and sudden death.

The differential diagnosis of preexcited AF includes ventricular tachycardia and atrial fibrillation with aberrancy. The presence of an apparent fusion and capture beat could lead one to the diagnosis of ventricular tachycardia, because these findings are considered diagnostic for ventricular tachycardia. Morphologically speaking, the tachycardia is ventricular in origin. Nevertheless, the marked cycle-length variation of more than 100% strongly argues against ventricular tachycardia and instead favors preexcited AF as the underlying arrhythmia mechanism. The right superior axis deviation and the fact that longer RR intervals lead to more fully preexcited QRS complexes compared with shorter RR cycles (the concertina phenomenon) virtually exclude AF with solely aberrant conduction.

Preexcited atrial fibrillation with rapid ventricular response reveals a typical electrocardiographic pattern that is often diagnostic at first glance. Because of its characteristic ECG features (fast, broad, and irregular), this tachyarrhythmia has been named FBI tachycardia. This potentially life-threatening clinical condition is obviously a case for the emergency rather than the secret service.

Disclosures

None.
Twelve-lead ECG during fast, broad, and irregular (FBI) tachycardia. Preexcited atrial fibrillation with rapid anterograde conduction over a left posterolateral bypass tract is present. Note the normal, narrow QRS complex (asterisk) among the irregularly irregular preexcited ventricular complexes and the varying degrees of preexcitation depending on variation in ventricular cycle length (the concertina phenomenon). The shortest RR interval is 160 ms.