Quiz: Wenckebach Requiring Permanent Pacing

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A 70-year old woman presented to the emergency department with fatigue and presyncopal episodes commencing two days earlier. The ECG recording revealed 2:1 atrioventricular block with periods of 3:2 Wenckebach conduction. The intracardiac electrograms during spontaneous sinus rhythm and atrial pacing are displayed below.

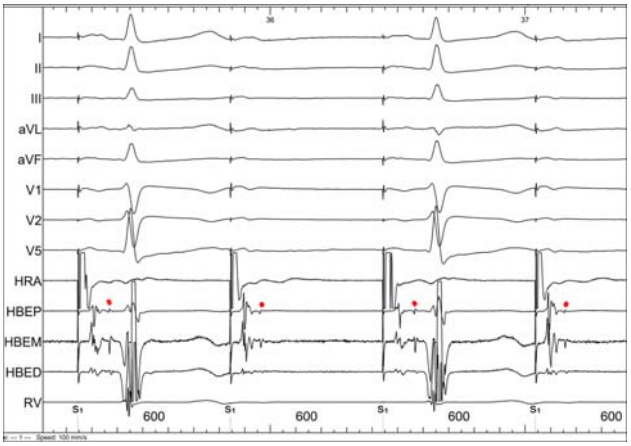

Figure 1. Atrial pacing. His bundle recording is marked with a red dot.

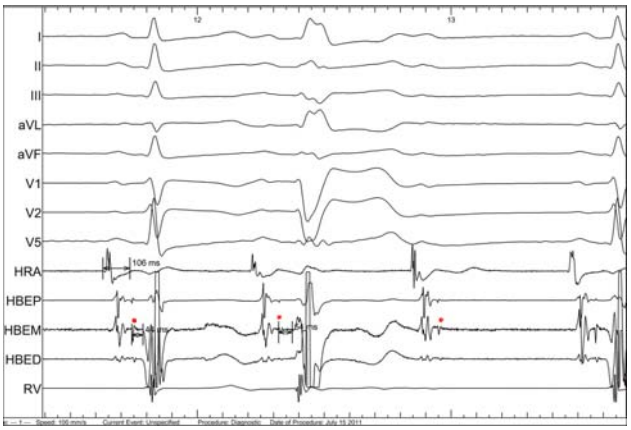

Figure 2. Recording during sinus rhythm. His bundle recording is marked with a red dot.

What is your diagnosis?

Answer to the quiz

Usually, Wenckebach conduction implies that the site of the disturbance is above the His bundle, namely in the atrioventricular node. In most circumstances this kind of conduction abnormality does not mandate the implantation of a permanent pacemaker. However in this specific case, we can see that during atrial pacing which reproduces 2:1 block, the conduction is blocked below the His bundle as the recording of both A (atrial) and H (His) electrograms suggest (Fig. 1). During sinus rhythm, Wenckebach pattern is apparent and the second beat is conducted with abberancy and a prolonged HV interval (Fig. 2). The third atrial beat is blocked below the His bundle. In this example we have an infra-Hisian Wenckebach conduction pattern which dictates the need for a permanent pacemaker.

Cardiology News /Recent Literature Review

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Local Atrial Inflammation Present in Paroxysmal AF

Atrial biopsies were obtained from 70 patients (age 60 ± 12 years, 49 males) undergoing radiofrequency catheter ablation for AF and 10 patients with Wolff-Parkinson-White syndrome, all undergoing trans-septal puncture. Biopsies were obtained by washing the dilator and needle used for trans-septal puncture with 20 mL sterile phosphate-buffered saline, and formalin fixed specimen were examined by immunohistochemistry for the presence of intracytoplasmic C-reactive protein. C-reactive protein was revealed in isolated atrial cardiomyocytes in 11 (73%) of 15 patients with paroxysmal AF as compared with 2 (25%) of 8 patients with persistent AF (P= 0.02). This technique for obrtaining biopsy specimen was safe and feasible. In this study, local atrial inflammation as assessed by C-reactive protein present in atrial myocytes, is more likely involved in paroxysmal rather than in persistent AF (Narducci ML et al, *Europace*. 2011 Mar 29. [Epub ahead of print])