

Wolff-Parkinson-White Syndrome and Atrial Fibrillation in a Patient With a Coronary Sinus Diverticulum

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A 51-year-old woman without known cardiac disease presented with an irregular wide QRS-complex tachycardia (Figure 1). After electrical cardioversion, the 12-lead surface ECG revealed sinus rhythm with ventricular preexcitation and negative delta waves in leads II, III, and aVF, indicating Wolff-Parkinson-White syndrome with a posteroseptal accessory pathway (Figure 2). The distinctly negative delta wave in lead II pointed to an accessory pathway within a coronary sinus diverticulum. This finding was confirmed by contrast media injection into the coronary sinus (Figure 3). In the electrophysiological study, orthodrome atrioventricular-reentrant tachycardia was easily inducible, and the earliest ventricular activation during sinus rhythm was mapped and found to be within the coronary sinus diverticulum. Using an irrigated-tip radiofrequency catheter, the accessory pathway

was easily ablated at the neck of the diverticulum. Accessory pathways in this location tend to have a very rapid atrioventricular conduction, putting these patients at risk of sudden death during atrial fibrillation; such pathways, therefore, should be ablated.¹

Disclosures

None.

Reference

1. Binder TM, Rosenhek R, Frank H, Gwechenberger M, Maurer G, Baumgartner H. Congenital malformations of the right atrium and the coronary sinus. *Chest*. 2000;117:1740–1748.



Figure 1. Twelve-lead surface ECG (25 mm/s) of an irregular wide QRS-complex tachycardia during atrial fibrillation in the presence of a rapidly conducting accessory pathway.



Figure 2. Twelve-lead surface ECG (25 mm/s): sinus rhythm with ventricular preexcitation and negative delta waves in leads II, III, and aVF.

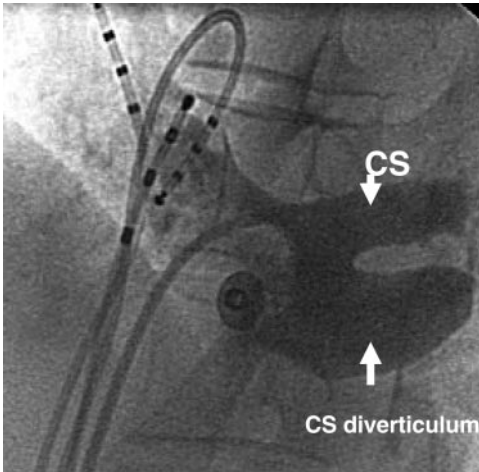


Figure 3. Giant coronary sinus diverticulum (contrast media injection; 45-degree left anterior oblique view).

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