

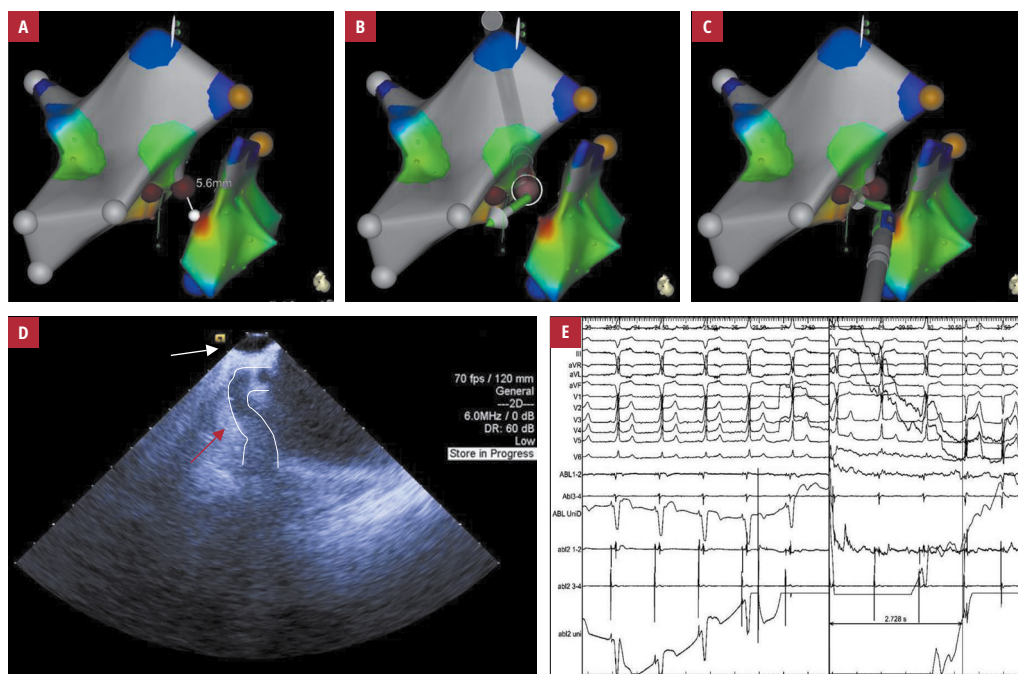
# Bipolar ablation of a posteroseptal accessory pathway in a patient without a typical coronary sinus ostium

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Bipolar ablation for a challenging arrhythmia location has recently become an accepted alternative to conventional unipolar ablation in case of its failure. One of such indications is ablation of a symptomatic

posteroseptal accessory pathway (AP) and other arrhythmia substrate after a failed attempt.<sup>1,3</sup> Although several investigators tested various bipolar ablation settings, the method is still evolving.



**FIGURE 1** **A** – distance between the earliest ventricle activation on the mitral annulus (MA) and the tricuspid annulus (TA): 5.6 mm; **B** – mapping catheter at the site of the earliest ventricular activation on the MA during left-sided mapping. An active catheter was positioned there during ablation. **C** – mapping catheter at the site of the earliest ventricular activation on the TA during right-sided mapping. A passive catheter was positioned there during ablation; **D** – intracardiac echocardiography view from the right atrium showing lack of the typical coronary sinus (CS) ostium (white arrow) and abnormal course of the syphon-like CV (red arrow). The CS was marked by a thin white line; **E** – electrocardiography during radiofrequency application. Limb and precordial leads on the upper part of the panel and intracardiac signals on the lower part of the panel are shown. Three seconds from the start of ablation (vertical line on the right-hand side at the middle of the screen) delta wave disappeared and normal QRS morphology emerged (the 4th QRS complex from the ablation onset).

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Herein, we present the case of a 58-year-old man with a posteroseptal AP after 2 failed unipolar ablation attempts. Intraprocedural intracardiac echocardiography (ICE) showed abnormal course of the syphon-like coronary sinus (CS) without a visible ostium, which was the reason for failure of CS cannulation and ablation during the previous procedure (FIGURE 1D; Supplementary material, *Video S1*). The AP was thought to be located deeper in the septum in close proximity to the CS. Taking into consideration 2 previous failed procedures and the abnormal anatomy, the decision was made to use a bipolar ablation system (HAT 500, Osypka AG, Rheinfelden, Germany) and ICE. Two 3-dimensional maps (Carto 3, Biosense Webster, Diamond Bar, California, United States) were created using an ablation catheter (SmartTouch, Biosense Webster) based on the earliest ventricular activation at the mitral annulus (MA) and tricuspid annulus (TA). The transseptal access was used to create a left atrial map with the ablation catheter. After the identification of the earliest ventricular activation on each site of the septum, a passive catheter was placed on the TA (Cerablate Cool, Osypka AG; FIGURE 1C), while an active catheter was located on the MA (SmartTouch, Biosense Webster; FIGURE 1B), (fluoroscopic presentation of active and passive electrodes during ablation, Supplementary material, *Figure S1*). The AP conduction disappeared and the QRS morphology normalized at the 3rd second of radiofrequency application (20 W; flushing rate, 30 ml/min; FIGURE 1E). There were 2 additional radiofrequency applications (cumulative radiofrequency time was 107 seconds). Acute ablation success was confirmed during an electrophysiological test with administration of isoprenaline and a subsequent injection of 18 mg of intravenous adenosine during rapid atrial pacing (500 ms). Standard electrocardiography performed after ablation and at 2-month follow-up showed no preexcitation and patient remains asymptomatic.

This case report shows that bipolar ablation is a valuable option for the treatment of posteroseptal AP when conventional ablation fails. It also shows that in case of difficult anatomy, ICE is very useful to perform a safe transeptal puncture and a successful ablation procedure.

#### SUPPLEMENTARY MATERIAL

Supplementary material is available at [www.mp.pl/kardiologiapolska](http://www.mp.pl/kardiologiapolska).

#### ARTICLE INFORMATION

**CONFLICT OF INTEREST** JB has received compensation for proctoring and speaking duties from Biosense Webster. Other authors declare no conflict of interest.

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