Atrial flutter ablation through the azygous continuation in a patient with inferior vena cava interruption

Armando Pérez-Silva, Jose L. Merino*, Rafael Peinado, and Jose Lopez-Sendon

Robotic Cardiac Electrophysiology Unit, Department of Cardiology, Hospital General La Paz, IdiPaz, Madrid, Spain

* Corresponding author. Tel: +34 9172 77 564, Fax: +34 9172 77 564, Email: jlmerino@arritmias.net

Ablation of atrial flutter (AFL) requires linear radiofrequency application; these procedures are usually performed via a femoral approach from the inferior vena cava (IVC). Congenital anomalies of this venous system may limit catheter ablation. This report presents ablation of an AFL through the azygous continuation and also reviews the prevalence of congenital IVC interruption among patients referred for AFL ablation.

Case report

A 62-year-old man with surgical repair of an atrial septal defect (ostium secundum) 14 years earlier was referred for ablation of typical AFL. Access to the right atrium (RA) was attempted through the right femoral vein, however the catheters followed a peculiar course. Angiography showed infrahepatic interruption of the inferior vena cava (IVC) and a dilated azygous vein draining into the superior vena cava (SVC) (Figure 1). A 24-pole catheter (Orbiter, Bard Electrophysiology, Lowell, MA, USA) was placed in the RA around the tricuspid annulus, a 4 mm tip ablation catheter (Marinr, Medtronic, Minneapolis, MN, USA) in the coronary sinus, and an irrigated 4 mm tip ablation catheter (Springkl, Medtronic, Minneapolis, MN, USA) in the RA. Catheters were introduced from the femoral vein through the azygous continuation. Geometrical reconstructions of the RA, SVC, and azygous continuation were obtained by a non-fluoroscopic navigation system (Ensite Navx, St Jude Medical, St Paul, MN, USA) (Figure 1). Isthmus dependence of the AFL was demonstrated and both AFL termination and bidirectional conduction block through the isthmus were achieved by linear

Figure 1 Right anterior oblique (A) and (B) left anterior oblique angiographic views of the azygous (Azg) continuation connecting with the superior vena cava (SVC). Left anterior oblique fluoroscopic view (C) showing the electrophysiological catheter positions. Geometrical reconstructions of the right atrium (RA) and Azg continuation obtained by the electronatomi cal system are also shown in the right anterior oblique (D) and left anterior oblique (E) views. CS, coronary sinus; PA, pulmonary artery.
Conflict of interest:

References