Unroofed Coronary Sinus as a Cause of Right Heart Dilatation in an Elderly Patient

Timotheos G. Kelpis, Vlasis N. Ninios, Georgios Giannakoulas, Georgios P. Spanos, Nikolaos E. Nikoloudakis, Antonis A. Pitsis

1St. Luke’s Hospital, Thessaloniki Heart Institute, 2First Cardiology Department, AHEPA University Hospital, 3Eurodiagnosi Medical Center, Thessaloniki, Greece

A 72-year-old acyanotic man presented with worsening shortness of breath on exertion, chronic atrial fibrillation and cardiomegaly on the chest radiograph. The transthoracic echocardiogram showed dilated right-sided cardiac chambers with normal left ventricular size and function. A three-dimensional transesophageal echocardiogram revealed the presence of an unroofed coronary sinus (Figure 1). Cardiac magnetic resonance imaging confirmed the presence of the defect without a persistent left superior vena cava (Figure 2). Cardiac catheterization demonstrated a left-to-right shunt with a shunt ratio of 2, a mean pulmonary arterial pressure of 26 mmHg, and pulmonary vascular resistance of 2.2 Wood units. During surgery, a type III (partially unroofed mid portion) coronary sinus defect was detected and successfully repaired with a patch (Figures 3 & 4).

References
Unroofed Coronary Sinus in an Elderly Patient

**Figure 1.** Real-time three-dimensional transesophageal echocardiogram, mid-esophageal view (zoom mode), showing the presence of a dilated coronary sinus. The view is through the left atrium and shows the absence of the diaphragm separating the left atrium from the coronary sinus (unroofed coronary sinus). RA – right atrium; MV – mitral valve; CS – coronary sinus.

**Figure 2.** Cardiac MRI, horizontal long-axis image, showing enlarged right atrium and ventricle, suggestive of a left-to-right shunt. Ao – aorta; PA – pulmonary artery; LA – left atrium; RA – right atrium.

**Figure 3.** Intraoperative identification of the defect.

**Figure 4.** Closure of the defect by placing a prosthetic patch.