


CARDIOVASCULAR FLASHLIGHTS

Infradiaphragmatic interruption of the inferior vena cava mimicking a double aorta

Lucy Hudsmith*, Benjamin Holloway, and Paul Clift
Department of Cardiology, The Queen Elizabeth Hospital, Edgbaston, Birmingham B15 2TH, UK

*Corresponding author. Tel: +44 1865 741166, Fax: +44 1865 221111, Email: lucyhudsmith@hotmail.com

A 17-year-old male with previous subclavian flap repair of a coarctation was referred for cardiovascular magnetic resonance (CMR) imaging for the surveillance of his surgical repair site. He was well to follow-up with good blood pressure control and no remarkable clinical findings.

CMR (Symphony, Siemens, 1.5 T) showed no evidence of recoarctation or aneurysm formation. However, cine images gave the impression of a double aorta (Figure). This resulted from a continuation of the hemiazygos vein joining with a left-sided superior vena cava draining into the coronary sinus and infrahepatic interruption of the inferior vena cava (IVC). The hepatic veins empty into the right atrium. There was no evidence of atrial isomerism.

Infra-diaphragmatic interruption of the IVC is a rare anatomical variant seen in 2–3% of congenital heart disease patients and can be misdiagnosed as an aortic dissection or partial rupture with echocardiography. It results from the failure of the connection between the right subcardinal vein and the liver and the dilatation of the supracardinal vein which develops into theazygos and hemiazygos veins. The hepatic veins drain directly into the right atrium.

The interruption of the infradiaphragmatic IVC may be associated with other cardiac malformations and polysplenia. Failure to identify this anomaly may result in complications in interventional and surgical procedures.

Top: Sagittal (left) and transverse (right) CMR images demonstrating the continuation of the hemiazygos vein (HA) combined with the left-sided superior vena cava posterior to the aorta (Ao).

Bottom: Coronal black blood images showing the hepatic veins draining into the right atrium (RA), and the left superior vena cava (LSVC) draining into the coronary sinus (CS).

Published on behalf of the European Society of Cardiology. All rights reserved. © The Author 2008. For permissions please email: journals.permissions@oxfordjournals.org.