

## Images in Congenital Cardiac Disease

# Non-invasive diagnosis of a fistula from the left coronary artery to the right atrium

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Keywords: Coronary fistula; high resolution computed tomography

CORONARY ARTERIAL FISTULAS ARE RARE MALFORMATIONS which account for 0.2 to 0.4% of all congenital cardiac anomalies, those from the left coronary artery being less common than fistulas arising from the right. Although angiography provides excellent anatomical characterization, recent advances in cardiovascular imaging have also allowed for non-invasive delineation of these malformations.

An 8-year old girl presented with congestive heart failure, pulsatile hepatomegaly, and a continuous murmur heard over the lower right sternal border. The transthoracic echocardiogram showed a massively dilated proximal left coronary artery (Fig. 1a, left panel) and continuous flow at high velocity into the region of the coronary sinus. A three-dimensional echocardiogram (Fig. 1a, right panel) in the short axis view also demonstrated this abnormality (arrow) particularly well.

64-slice computed tomography (Fig. 1b) was performed under conscious sedation, and without beta-blockade, to confirm the course of the fistula. This showed the fistula (yellow arrow) originating from the circumflex branch of the left coronary artery, traveling postero-inferiorly near the great cardiac vein, and draining into the right atrium just superior to the coronary sinus. The dilated main stem of the left coronary artery (white arrow), and the normal anterior interventricular branch (blue arrowhead), are also clearly seen.

These findings were confirmed at surgery. The fistula was closed with a patch at its point of entry into the

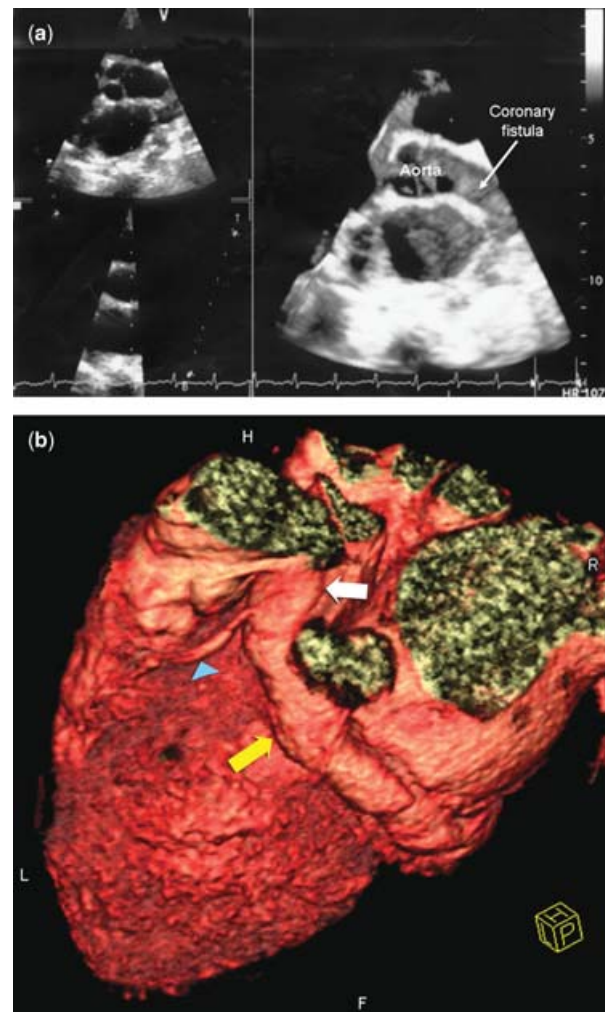


Figure 1.

right atrium. The patient recovered very well post-operatively, with complete resolution of her symptoms.

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Accepted for publication 11 May 2007