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Fistulous connection between the left anterior descending coronary artery and pulmonary artery

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DESCRIPTION

A 65-year-old woman who had presented with exertional breathlessness was found to have severe mitral regurgitation secondary to mitral valve prolapse, on transthoracic echocardiography. She was admitted for diagnostic coronary angiography, prior to mitral-valve surgery. The major epicardial coronary arteries were demonstrated to be free of disease, and left ventriculography confirmed severe mitral regurgitation. However, an anomalous arterial connection was seen to arise from either the left main coronary artery (LM) or the proximal left anterior descending coronary artery (LAD). In the left anterior oblique cranial projection, the anomalous vessel had the striking appearance of a 'Valentine Heart' (figure 1).

Subsequently, at the time of mitral valve surgery, the anomalous vessel was shown to be a fistulous connection between the LAD and the pulmonary artery (PA) and was ligated during the procedure.

Coronary arteriovenous fistulae are rare malformations, accounting for 0.2–0.4% of congenital cardiac anomalies. They may be associated with a continuous murmur or may be an incidental finding on coronary angiography. They may result in a 'steal' phenomenon causing ischaemic symptoms in the absence of occlusive coronary disease¹ and in severe cases can lead to heart failure.²

Fistulous connections between the coronary arteries and the PA are well described in the literature.^{3–4} Successful surgical repair of coronary-pulmonary fistulae is also well documented.^{5–6}

Due to the potential for serious clinical sequelae, some authors have advocated that all coronary arteriovenous fistulae should be corrected surgically or by transcatheter closure.⁷ This can easily be achieved at the time of surgery for concomitant cardiac conditions, although the optimal management strategy for isolated coronary fistulae remains unclear.

Figure 1 Left anterior oblique cranial projection of the left coronary circulation showing left main coronary artery (LM) bifurcating into the left anterior descending artery (LAD) and left circumflex artery (LCX). A fistulous connection can be seen to arise from the proximal LAD.

Competing interests None.

Patient consent Obtained.

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