Successful surgical repair of a giant coronary-pulmonary artery fistula: role of magnetic resonance imaging

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A 69-year-old woman was referred for the evaluation of an abnormal shadow at the left cardiac border on her chest X-ray films (Panel A). A Levine II/VI continuous murmur was heard at the upper left parasternal area on physical examination, while coronary angiogram (CAG) subsequently revealed the presence of a coronary-pulmonary artery fistula (CPAF) associated with the formation of a giant aneurysm measuring 35 mm × 30 mm in size (Panel B). Although CAG showed that the fistula originated from the proximal portion of the left anterior descending artery, the site of anastomosis could not be determined. Magnetic resonance imaging (MRI), however, clearly delineated the conduit from the aneurysm to the PA (Panel C, dashed arrow; see Supplementary data online, Clips A and B). The resection of the aneurysm was successfully performed subsequently.

A CPAF is a rare cardiac abnormality found in 0.3–0.8% of the patients. Surgical intervention is indicated if there is (i) a shunt of more than 30%, (ii) cardiac ischaemia, (iii) advanced pulmonary hypertension, (iv) advanced congestive heart failure, (v) a history of infectious endocarditis, and/or (vi) aneurysmal formation. To the best of our knowledge, this is the first report that clearly shows, with MRI, the conduit between the PA and the aneurysm. The identification of the conduit is critically important for the successful ligation of the fistula, and as shown by this report, MRI can be an effective modality in detecting the drainage site of a CPAF. Therefore, patients with CPAF may benefit from investigation with MRI before performing surgical resection.

Supplementary data are available at European Heart Journal – Cardiovascular Imaging online.