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Corresponding author:
Leonardo Rivera-Rodríguez;
Email: rivleonard@gmail.com

The hidden dangers of the coronary anomalies: an ARCAPA case report

Luis F. Castillo-Aguilar[1], Leonardo Rivera-Rodríguez[1] and Jorge L. Cervantes-Salazar[2]

[1]Department of Pediatric Cardiology, National Institute of Cardiology, Mexico City, Mexico and [2]Department of Congenital Heart Surgery, National Institute of Cardiology, Mexico City, Mexico

Abstract

An anomalous origin of the right coronary artery from the pulmonary artery case report. The diagnosis was made by angiotomography. Reimplantation of the right coronary artery into the ascending aorta and reconstruction of the pulmonary artery were conducted.

We report a case of a 15-year-old male patient who began experiencing precordial pain and syncope during physical activity on two occasions. The patient had no relevant medical history. Physical examination, electrocardiogram, and chest X-ray revealed no abnormalities. A transthoracic echocardiogram revealed a dilated right coronary artery, the origin and full course could not be visualised, given the inconclusive study, a coronary angiotomography was performed, revealing an anomalous origin of the right coronary artery from the pulmonary artery trunk and along with collateral from the septal branches (Figure 1). Reimplantation of the right coronary artery to the ascending aorta and reconstruction of the pulmonary artery with a patch were performed without complications (Figure 2). Left ventricular ejection fraction was 59% and right ventricular function was at a shortening fraction of 44%. The patient was hospitalised for one week and was discharged home in good health. The study was carried out in accordance with the Declaration of Helsinki; it was approved by the Institutional Review Board (IRB). The patient's legal guardian's informed consent was obtained.

The anomalous origin of the right coronary artery from the pulmonary artery is an extremely rare CHD occurring in only 0.002% of the population. The anomalous origin of the right coronary artery from the pulmonary artery often goes unnoticed because it frequently presents without symptoms.[1]

The preferred treatment for anomalous origin of the right coronary artery from the pulmonary artery involves surgically reimplanting the right coronary artery into the ascending aorta.

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Competing interests. The authors declare none.

Ethical standards. The study was carried out in accordance with the Declaration of Helsinki; it was approved by the Institutional IRB. The patient's legal guardian's informed consent was obtained.

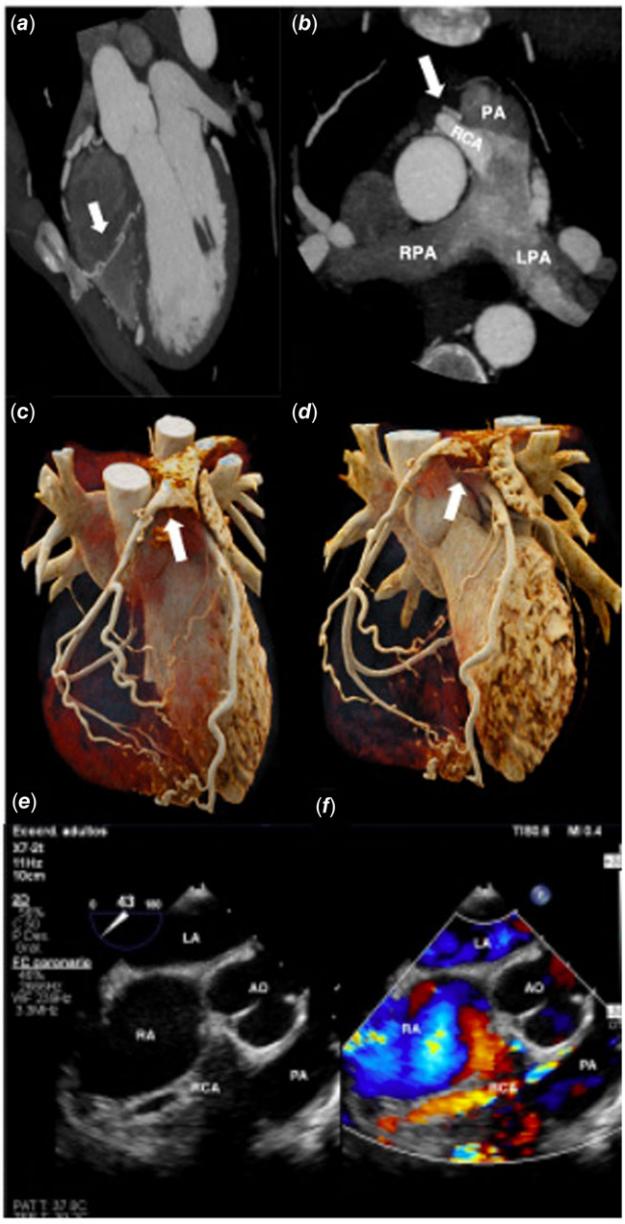

Figure 1. ***(a)*** Multiplanar reconstruction (MPR) image showing collateral artery crossing right ventricle (RV) cavity on its way to RV free wall (white arrow). ***(b)*** MPR image showing RCA emerging from the pulmonary artery (PA) trunk (white arrow). ***(c)*** Volume rendering reconstruction (VRR) image showing Anomalous origin of the right coronary artery from the pulmonary artery (ARCAPA) and extensive collateral arteries (white arrow). ***(d)*** VRR image showing left coronary artery with normal origin (white arrow). ***(E)*** **and** ***(f)*****.** Transesophagic echocardiograph short axis mid oesophageal view showing the RCA emerging from the trunk of the PA. RPA = Right pulmonary artery; LPA = Left pulmonary artery; Ao = Aortic valve; RA = Right atrium; RCA = Right coronary artery; LA = Left atrium.

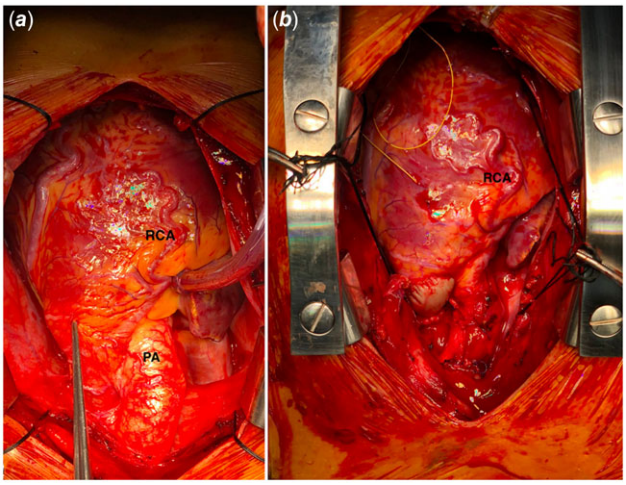

Figure 2. ***(a)*** Surgical procedure image showing right coronary artery (RCA) emerging from the pulmonary artery (PA) trunk. ***(b)*** Surgical procedure image showing the reimplantation of the RCA to the ascending aorta and reconstruction of the PA with a patch.

Reference

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