

- Hillege HL, van Veldhuisen DJ. Effect of moderate or intensive disease management program on outcome in patients with heart failure: Coordinating Study Evaluating Outcomes of Advising and Counseling in Heart Failure (COACH). *Arch Intern Med* 2008;**168**:316–324.
12. Radlof LS. The CES-D scale: a self report depression scale for research in the general population. *Applied Psychological Measurement* 1977;**1**:385–401.
13. van der Wal MHL, Jaarsma T, Moser DK, Veeger NJ, van Gilst WH, van Veldhuisen DJ. Compliance in heart failure patients: the importance of knowledge and beliefs. *Eur Heart J* 2006;**27**:434–440.
14. Evangelista LS, Doering LV, Dracup K. Usefulness of a history of tobacco and alcohol use in predicting multiple heart failure readmissions among veterans. *Am J Cardiol* 2000;**86**:1339–1342.
15. White HD. Adherence and outcomes: it's more than taking the pills. *Lancet* 2005;**10**:1989–1991.
16. Smart N, Marwick TH. Exercise training for patients with heart failure: a systematic review of factors that improve mortality and morbidity. *Am J Med* 2004;**116**:693–706.
17. O'Connor CM, Whellan DJ, Lee KL, Keteyian SJ, Cooper LS, Ellis SJ, Leifer ES, Kraus WE, Kitzman DW, Blumenthal JA, Rendall DS, Miller NH, Fleg JL, Schulman KA, McKelvie RS, Zannad F, Piña IL. Efficacy and safety of exercise training in patients with chronic heart failure; HF-ACTION randomized controlled trial. *JAMA* 2009;**301**:1439–1450.
18. Chung ML, Lennie TA, de Jong M, Wu JR, Riegel B, Moser DK. Patients differ in their ability to self-monitor adherence to a low-sodium diet versus medication. *J Card Fail* 2008;**14**:114–120.

CARDIOVASCULAR FLASHLIGHT

doi:10.1093/eurheartj/ehq045

Online publish-ahead-of-print 10 March 2010

Isolation of the right subclavian artery in interrupted aortic arch

Angela Oxenius*, Christian Balmer, and Emanuela Valsangiacomo Buechel

Division of Pediatric Cardiology, University Children's Hospital Zurich, Switzerland

* Corresponding author. Tel: +41 44 2667022, Fax: +41 44 2667981, Email: angela.oxenius@kispi.uzh.ch

A 15-day-old newborn presented with cardiovascular shock. Upon clinical suspicion of congenital heart disease (CHD), medical treatment was initiated. Echocardiography showed a left-sided interrupted aortic arch Type B and a large ventricular septal defect (VSD). Magnetic resonance imaging (MRI) was requested for preoperative exact anatomical delineation of the interrupted aortic arch and of its branches. Additionally, MR angiography depicted an isolated right subclavian artery originating from the right pulmonary artery (Figure). Two days later, the patient underwent successful surgical repair with reconstruction of the aortic arch, VSD-closure, and re-implantation of the right subclavian artery into the aortic arch.

Origin of the subclavian artery from the pulmonary artery is a rare anomaly of the aortic arch. It is defined as a loss of continuity between the subclavian artery and the aorta, with a persistent connection to the homolateral pulmonary artery through a patent ductus arteriosus. It is mostly associated with intracardiac or aortic arch anomalies. Embryologically, isolation of the subclavian artery always occurs on the contralateral side of the aortic arch. The right subclavian artery is four times less frequently involved than the left one. This lesion is usually asymptomatic and mainly recognized during evaluation of CHD. Patients may present with diminished blood pressure or lower oxygen saturation in the involved arm; pulmonary or subclavian steal syndrome can occur.

The incidence of microdeletion 22q11 in patients with interrupted aortic arch is 55%. In patients with an additional anomaly of the subclavian artery, the incidence may rise up to 81%.

Figure. Contrast-enhanced MR angiography: (A) anterior view, (B) left anterior oblique view, (C) right anterior oblique view, (D) 3D reconstruction, posterior view. Double asterisks show right subclavian artery arising from RPA. LSA, left subclavian artery; RPA, right pulmonary artery; AOA, ascending aorta; AOD, descending aorta; LV, left ventricle; RV, right ventricle; VSD, ventricular septal defect; PDA, persistent ductus arteriosus; MPA, main pulmonary artery; LA, left atrium.

