

Angiographic long-term follow-up after arterial switch operation: experience of our Institution.

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Introduction: The arterial switch operation (ASO) has become the surgical treatment of choice for complete Transposition of the great arteries (cTGA). However there is an increasing evidence of complications in long-term follow-up.

Objectives: Aim of the study was to detect late complications of ASO.

Methods: Between 2000 and 2013, among 150 patients (pts) treated with ASO at our Institution, cardiac catheterization was performed in 79 pts (M 54, F 25, mean age 11 y). Indication to catheterization was evidence of complication by echocardiography, by pulmonary perfusion scintigraphy or routine screening in patients aged more than 8 years old. We assessed the following features: Cardiac Index (CI), Pulmonary Vascular Resistance (PVR), pulmonary branch stenosis, aortic regurgitation (AR), aortic root dilation (ARD), coronary arteries patency.

Results: All patients were in NYHA class I, on sinus rhythm and without cardiac medication except 4. Coronary anomalies before surgery were present in 24 pts. The echocardiogram, the EKG-Holter and the ergometric stress test did not raise the suspicion of myocardial perfusion defect. CI and PVR were normal in all patients. Residual trivial to mild AR was present in 14/79 pts (17%) and moderate to severe in 3/79 (4%); mild to moderate ARD was present in 22/79 (27%); moderate to severe ARD in 2/79 (2%).

Coronary angiography showed coronary complications in 8 of 79 pts (10%): total occlusion of the main LCA in 2 asymptomatic patients and occlusion of the LDA in 1 pt. In 3 subjects there were stenosis of the LCA and in 2 cases there were a stenosis of the RCA. One subject without evidence of coronary anomalies died from ventricular fibrillation. Pulmonary arteries angiography showed stenosis in 24/79 pts (30%). Those lesions required percutaneous angioplasty in 23 pts and stent implantation in 1 with good result.

Conclusions: Our patients treated with ASO are asymptomatic despite the relative high incidence of coronary anomalies or pulmonary branches stenosis. No evidence-based treatment is yet available for asymptomatic coronary complications, however the risk of sudden death is real. This issue should be discussed with parents and patients and strong sport and stress activities should be discouraged.