Outcomes of coronary artery lesions after neonatal arterial switch operation


Background: Coronary artery lesions (CL) are the main cause of morbi-mortality after arterial switch operation (ASO) for transposition of the great arteries (TGA). Outcome and treatment of CL after ASO has been scarcely reported.

Objective: To study the long-term outcomes of CL after ASO.

Methods: We identified 75 patients with CL after ASO over a period of 30 years. CL were either ostial or proximal, and involved the left main stem in 34 patients, the left anterior descending artery in 19, the circumflex artery in 10, and the right coronary artery in 12 patients. 35% of patients were symptomatic and diagnosed at time of an ischemic event. The remaining 65% were asymptomatic and diagnosed during a systematic screening. In this group, myocardial ischemia (MI) was demonstrated in 45% of patients.

Results: First intention treatment was coronary revascularization in 32 patients (43%) (surgical angioplasty in 25, graft by-pass in 3, percutaneous balloon dilatation in 5), medical treatment in 15 (20%), and surveillance in 25 (33%). Three patients died before any treatment. Mean follow up was 10.6 ± 7.9 years. Survival was 90% at 20 years. A second intention treatment was needed because of a new anatomical lesion or new onset MI in 27% of patients who received medical treatment as first line therapy, in 20% of patients who were not treated, and in 12.5% patients who underwent revascularization. Overall, revascularization was performed in 73% of symptomatic patients, 72% of asymptomatic patients with MI, and in 22% of asymptomatic with no MI at diagnosis. At last follow-up, one patient has a residual MI.

Conclusion: Coronary lesions after ASO are not uncommon. In patients with MI, revascularization seems to be the treatment of choice. In non-ischemic patients at diagnosis, early revascularization needs to be considered in light of the severity of the lesion and as MI can appear during follow-up.