CORONARY ARTERY OBSTRUCTION AFTER THE ARTERIAL SWITCH OPERATION: IS THERE REALLY A LONG-TERM PROBLEM?

Introduction: Reimplantation of the coronary arteries in the neo-aortic root is an important part of the arterial switch operation (ASO) for transposition of the great arteries. Postoperative coronary pathology is a potentially lethal complication with incidences reported of 3.3 to 18%. This study evaluates the presence of coronary obstruction and myocardial infarction or left ventricular (LV) dysfunction using multimodality imaging in patients decades after ASO.

Methods: Thirty-two patients after ASO were included. All patients underwent 256-slice computed tomography angiography (CTA). Cardiac magnetic resonance imaging was performed for late gadolinium enhancement (LGE) and measurement of LV ejection fraction (LVEF).

Results: All patients (63% male; mean follow-up 23.5 ± 4.9 yrs) were free of complaints of chest pain or dyspnea. Distribution of coronary artery origins is illustrated in the figure, 7 patients had an unusual coronary anatomy. Calciumscore was 0 in all patients. No coronary stenosis - either of the origo or in the course of the arteries - was seen on CTA. One patient had an interarterial course of the LAD. Seven patients (22%) had a decreased LVEF (<50%), but LGE was not demonstrated in any of the patients.

Conclusions: In contrast to previous reports, the current study found no coronary pathology using CTA in patients up to 33 years after ASO. Although 22% of the patients had a decreased LVEF, coronary obstruction or past myocardial infarction could not be demonstrated by CTA or LGE.