

Importance of coronary CT angiography after arterial switch operation in transposition of the great arteries patients

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Introduction: Mortality and morbidity in patients with transposition of the great arteries (TGA) submitted to arterial switch operation (ASO) depends mainly on the state of coronary perfusion, being that coronary abnormalities are an important late cause of death in these patients. CT angiography provides accurate information on coronary anatomy, very useful for postoperative management. It has also proven to be a safe exam in the paediatric population. The aim of this study is to describe our institutional experience with CT angiography in TGA patients, and its role on postoperative management of these patients.

Methods: retrospective analysis of clinical processes of TGA patients who performed coronary CT angiography CT between January 2013 and September 2017.

Results: Between January 2013 and September 2017, 18 TGA patients performed coronary CT angiography, with a medium age of 14 years. 66% (12) performed the exam due to suspicion of ischemia, 22% (4) to evaluate coronary anatomy and the remaining to evaluate the relationship between coronary arteries and surrounding structures.

Among patients with suspicion of ischemia, 83% were symptomatic (chest pain/ fatigue). The remaining performed the exam due to altered previous exams and one due to iatrogenic coronary lesion during surgery.

60% (6) of symptomatic patients had significant lesions identified in coronary angiography CT (kinking: 3, occlusion:1, filiform coronary:2), with modification of action in 3 patients, two of them being submitted to coronary surgery afterwards.

Only 16% of all patients needed to perform complementary exams to clarify their clinical status (mainly cardiac MRI to evaluate perfusion). 55% previously performed conventional angiography, and in half of the patients a coronary abnormality was identified, but all patients needed CT angiography to clarify the anatomy or the significance of the abnormalities found.

None of the patients presented complications after CT angiography, and only 22% (4) needed general anaesthesia. The medium doses of radiation were 2,4mSv.

Conclusion: CT angiography proved to be safe and useful in paediatric patients. It is a very fast technique that provides detailed information on coronary anatomy, crucial for the postoperative management and selection of high-risk patients after ASO.