

# Chapter 16

## REVIEW OF THE TECHNIQUES FOR CORONARY TRANSFER IN THE ARTERIAL SWITCH OPERATION

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### Introduction

Since Jatene et al. first described the arterial switch operation (ASO) for the transposition of great arteries (TGA) in 1975 (1), it has become a standard procedure for the treatment of TGA and some forms of double outlet right ventricle (DORV) with low mortality and excellent long-term results (2-5). Optimal coronary configuration is the most important issue in achieving a successful result in the arterial switch procedure. Thus, transfer of the coronary arteries is a crucial step during the ASO (6). The potential risk is due to impaired coronary perfusion caused by kinking, distortion, stenosis, or compression of the coronary arteries (7). Early mortality is almost always due to difficulty with coronary artery transfer resulting in myocardial ischemia (8). In particular, there is also an increased risk of death associated with abnormal coronary artery patterns (9). In the current era, technical modifications in coronary reimplantation have minimized coronary artery pattern related risks (10). All coronary artery patterns are theoretically transferable. Different techniques have been described for coronary transfer (11).

This chapter reviews the conservative and current operative approaches for the coronary artery transfer in the arterial switch operation.

### The Approaches for All Coronary Artery Patterns

The techniques to be mentioned this part of chapter can also be performed in complex coronary artery patterns as well as usual coronary patterns.

### *Trap door technique*

The trapdoor technique which is probably the most commonly used and preferred by many surgeons was first used in 1978 by Yacoup and Radley-Smith (12) and by Planché and his colleague in 1988 (13) in their series and was first described as the terminology of 'trapdoor' by Brawn and Mee in 1988 (14). In this technique, the coronary arteries are transposed to medially hinged trapdoor flaps created in

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