

# The long-term results of double switch operation and functional repair for congenitally corrected transposition of the great arteries

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This manuscript is a summary of long-term results up to 20 years of functional repair for congenitally corrected transposition of the great arteries (cc-TGA) in a single institution focusing on TVR. Theoretically speaking, double switch operation (DSO) is expected to improve long-term prognosis using morphological left ventricle in the systemic circulation compared to conventional repair for cc-TGA and there are accumulating reports on favorable outcome of DSO in early and mid-postoperative periods [1–3]. Especially atrial switch plus arterial switch could be performed with low morbidity, and it should be considered as the optimal procedure [4]. However, because of its complexity, it has been reported recently that the morbidity such as arrhythmia and reoperation was not rare in the long-term period [4–6]. According to our previous study, the present indications of double switch operation for cc-TGA in our institute are thought to be (1) the age limit: 15 years old, (2) the estimated RV volume >70 % of normal in the atrial and arterial switch and >150 % of normal in the atrial switch and intraventricular rerouting [4]. Therefore, functional repair for cc-TGA can still be an option for adult case of cc-TGA nowadays. In this point, this manuscript is worthy to be reported. Especially it was

amazing that there were no reoperation-related TVR and no complications related to bleeding or the coagulation system.

The morphology of TV in cc-TGA was frequently complex Ebstein-like form and TVR should be indicated if RV served as systemic ventricle. The long-term results of functional repair for cc-TGA had been thought to be fairly good so far; however, it was found recently that its morbidity and mortality were deteriorated suddenly due to RV dysfunction in the ultra-long-term period beyond 30 years [3]. Patients with cc-TGA are increasingly subject to congestive heart failure with advancing age; this complication is extremely common by the fourth and fifth decades. Tricuspid (systemic atrioventricular) valvular regurgitation is strongly associated with RV (anatomical right ventricle connected to aorta in cc-TGA patients; systemic ventricle in cc-TGA) dysfunction and CHF [7]. There is a substantial burden of atrial tachyarrhythmia in those patients who survive to adulthood with a systemic right ventricle. Management of atrial tachyarrhythmia, along with systemic right ventricular dysfunction and systemic atrioventricular valve regurgitation, is likely to be the major challenge for this group of patients over the next decade [8]. In this point, authors should follow up their patients carefully from now on and report the results in the ultra-long-term period.

**Conflict of interest** The author has declared no competing interest.

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