Early and Midterm results of aortic root translocation using pivot rotation technique for complex forms of TGA.

Ide Y., Masaya M., Maiko T., Hiroki I., Kanno Y., Kenta I., Kisaburo S.
Mt. Fuji Shizuoka Children’s Hospital, Shizuoka, Japan

Objectives: To clarify the early and midterm results of aortic root translocation (ART) using “pivot rotation technique” in children with complex forms of TGA.

Methods: A retrospective review of 6 patients who underwent ART in our institute from January 2006 to December 2013. ART has been applied for patients with d-TGA(3), DORV(2), ccTGA(1) having LVOTO and small/remote VSD. Seven palliative procedures had been performed in 5 patients previously. The principal details of the operation are as follows: The aortic root was partially excised from the RV and only one coronary artery button was detached. Then the root was translocated over the LV by rotating it around the un-detached coronary pivot. After the re-implantation of detached coronary artery and VSD closure, RVOT is reconstructed.

Results: Median age and body weight at ART was 1.8(0.6~5.0) years and 10.1(7.5~14.6) kg, respectively. Their aortic and pulmonary valvular size was 4.47(2.47~6.08) and -3.76(-5.45~-0.9) in z-score. RVOT reconstruction was achieved with a tricuspid handmade ePTFE graft(3) or native pulmonary valve(3)(=double root translocation:DRT). One patient required pacemaker implantation for complication of complete AVB. With a median follow-up of 2.0(1.3~7.6) years, there were no early or late deaths. One patient required reoperation for pulmonary valvular stenosis 4.3 months after DRT. None of the patients have developed aortic regurgitation, LVOTO, nor coronary problems during the follow-up.

Conclusions: ART using pivot rotation technique will be a good surgical option for complex forms of TGA. Long-term benefits need to be evaluated with a longer follow-up.