

Mid-Term Results of the Ross and Ross/Konno Procedure

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Introduction: The Ross and Ross-Konno procedure may be the only alternative surgical method in infants and children with congenital aortic valve disease. In this study, we aim to show the midterm outcomes of pediatric patients undergoing the Ross operation.

Methods: From 2011 to 2015, a total of 8 patients underwent either Ross or Ross-Konno operation were included in this retrospective study. Median age was 4,5 years (ranged from 3 months to 17 years). Preoperative diagnosis was congenital aortic stenosis in all patients. In 6 of them, aortic regurgitation also present. Four patients had bicuspid aortic valve and 1 patient had Shone's syndrome. Seven patients had previous interventions (balloon valvuloplasty (n=4), ventricular septal defect repair (n=1), aortic valve repair (n=1) and aortic coarctation repair (n=1)). One patient needed mechanical ventilation preoperatively. Ross-Konno procedure was performed in 5 patients and other 3 patients underwent Ross operation. Pulmonary reconstructions were performed by using Contegra conduit except one patient who had pulmonary homograft. Additional subaortic resection was required in 2 patients, and mitral valve repair in 1. Only one adult sized patient had pulmonary autograft wrapping with dacron conduit.

Results: There was no mortality and major morbidity. Mean cardiopulmonary bypass and cross clamp times were 234 ± 64 and 177 ± 38 minutes respectively. Two patients underwent delayed sternal closure. Three patients had pneumonia. Median intensive care and hospital stays were 4,5 and 13,5 days respectively. All patients were followed up between 3 months and 4 years (mean 29,3 months). Only two of the patients had moderate pulmonary conduit stenosis and one patient had mild mitral valve regurgitation. There was no moderate or severe aortic valve regurgitation seen at last follow-up. The neo-aortic valve and root grew with the patient and median valve Z scores were in the appropriate range for all patients.

Conclusions: Pulmonary autograft and pulmonary conduit functions were good during mid-term follow-up. The Ross and Ross-Konno procedure remains a good option for aortic valve replacement in children and young adults and can be performed with low mortality.