Heart Failure and Cardiomyopathies

TRANSAPICAL MYECTOMY IN CHILDREN WITH HYPERTROPHIC CARDIOMYOPATHY: EARLY AND MID-TERM RESULTS

Poster Contributions
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Background: The transapical approach to myectomy in hypertrophic cardiomyopathy (HCM) has been utilized in the subset of HCM patients with heart failure, midventricular obstruction and apical cavity obliteration with low stroke volume. However, minimal outcome data are reported addressing the role of transapical myectomy in children.

Methods: We reviewed 14 pediatric patients (6 males) with HCM who had a transapical approach to myectomy. Surgeries were performed between 2002 and 2013. Mean age was 14 ± 4.4 years. Mean weight was 62.1 kg ± 20.6 kg. Preoperative symptoms included: dyspnea (86%), pre-syncope (79%), chest pain (71%) and syncope (43%). There were 11/14 (79%) patients with midventricular obstruction. Preoperative mean gradient was 60 mmHg ± 26 mmHg. Concomitant aortotomy was performed in 10/11 patients (91%); a small aortic annulus precluded adequate exposure of the mid ventricle. A small left ventricular (LV) cavity with low end diastolic volume (EDV) and no obstruction was present in 3/14 patients (21%). In those patients, the mean systolic dimension by echocardiogram was 6 mm ± 3.4 mm.

Results: Midventricular obstruction was relieved in all patients with obstruction using a transapical approach to myectomy. Intraventricular gradients were reduced to 17 ± 18 mm Hg (p =0.0005). In patients with small LV cavities, EDV increased to 31 mm ± 2.5 mm (p=0.007). Total mean bypass time was 82 min ± 54 min. There were no early deaths. Early complications included complete heart block in 2 patients and ventricular tachycardia in one patient. There were no aortic or mitral valve injuries and no aneurysms related to the apical incision. There was one early reoperation for mitral valve repair for persistent regurgitation. Median followup was 2.1 years; maximum, 8.9 years. Overall symptom improvement occurred in 71% of patients. Survival at five years postoperative was 100%.

Conclusion: The transapical approach in pediatric patients provides excellent exposure for mid ventricular and apical myectomy, relief of intraventricular gradients and related symptoms. There were no valve injuries, no complications related to the apical incision and 5 year survival was similar to expected survival.