

Aortic valve surgical repair in congenital patients: does age and size really matter?

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Objectives: Congenital aortic valvulopathy is a real challenge for the valve sparing surgery. These valves compared with acquired pathology are very complex, due to structural anomalies of the valve itself and the associated lesions at the sub/supravalvular levels or the aortic root. The patient's size (from infant to adult) is also a problem. In order to delay the time of the valve replacement, our first surgical option in each patient is to spare his aortic native valve. We report the conservative aortic valve surgery in our congenital heart unit and analyse the differences between children and adults patients.

Methods: Retrospective study: 61 operations performed in 59 patients, during the period 2010-2018. Two groups of 46 children (<14 years) and 15 adults (≥14 years) were compared. Statistical analysis was done with SPSS-15.0.

Results: Median age in children-group: 1,5 years, in adults-group 28 years. Previous surgery was more frequent in adults-47% compared with children-26% (pns). Children have mainly a stenotic aortic valve (bicuspid-46%, monocuspid-15%), and adults have a dilated aortic root with preserved valve function (p: 0,04).

Operations performed with extracorporeal circulation, aortic clamp and trans-aortic approach. Surgical techniques were different in each group (p:0,007): Children valvuloplasty included commissurotomy-6(13%), aortic leaflet plasty-16(35%), commissurotomy + aortic leaflet plasty-23(50%), and David operation-1(2%). Adults received David operation-6(40%), aortic leaflet plasty-5(33%), and commissurotomy + aortic leaflet plasty-4(27%). Associated surgery was done in 80%-adults and 67%-children (pns). Median extracorporeal and aortic clamp times were longer in adults respect to children (p:0,02).

One child with several complications died. Inhospital mortality was 2,2% in children and 0% in adults. We had no late mortality after discharge.

Follow-up was complete, with median of 22 months (IQR: 13-39). Percutaneous reintervention was needed in 5(11%-children and 1(7%-adult (pns). Reoperation was required in 6(14%-children and 1(7%-adult (pns). Nowadays the majority of our patients in both groups are asymptomatic, with normofunction of their aortic valve.

Conclusions: Aortic valve sparing surgeries in children and adults performed in our congenital cardiovascular unit have good results, with minimal mortality and acceptable reintervention rate. Children presents mainly with stenotic aortic valves and adults with a dilated aortic root.