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Aortic valve sparing surgery in congenital heart disease

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Objectives:
Aortic valve lesions requiring surgery in patients with congenital heart disease are a real challenge. These valves present more complexity in comparison with acquired valve lesions, owed to more severe structural anomalies of the valve itself, and the wide range of size of the patients from infant to adult. In order to delay the time of the valve resection and prosthesis interposition, our first surgical option in each patient is trying to spare his aortic native valve. We present here our experience with conservative aortic valve surgery in our congenital heart unit.
Methods:
Retrospective study:27 opertions performed in 26 patients, during 2010-2015. Statistical analysis with SPSS 15.0.
Results:
Median age 7 years.(IQR 0.6-12), and 37% were ≤ 6 moths. Previous percutaneous aortic valvuloplasty was done in 26%. Clinical symptoms: asymptomatic 59%, dispnea 30%, angina 7%. Aortic valve anatomy: bicuspid 48%, monocuspid 11%, cuadricuspid 4%. Aortic valve main functional pathology: stenosis 11(41%), insufficiency 6(22%) and double lesion 5(18%).
Operations were performed with cardiopulmonary by-pass (CPB) and aortic clamp (AoC), with transaortic approach. Surgical techniques employed comissurotomy in 5(18%), aortic leaflet plasty in 7(26%), David operation in 4(15%). Associated surgery was done in 22(81%) patients, mainly consistent in closing a ventricular septal defect and subaortic membrane resection. Median CPB time 96 minutes (IQR 77-185) and AoC time 67 minutes (IQR 55-143). Hospital mortality 1(3,7%) patient. Median intubation time 7 hours (IQR 3-52); median intensive care unit stay 4 days (IQR 3-6) and median hospital stay 8 days (IQR 6-14).
Follow-up is complete, median 16 months (RIC 4-29). There is no late mortality, and 2 patients were reoperated during this time. Nowadays, the majority of our patients are asymptomatics, with normal function of their aortic valve.
Conclusions:
Aortic valve sparing surgery in patients with congenital heart disease presents more complexity related to valve anatomy, the size of the patient and the associated pathology. If we achieve the aortic valve conservation, our results are good related to short and medium term follow-up