

Valve Sparing Aortic Root Replacement in Pediatric Age Group

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INTRODUCTION:

Aortic valve-sparing root replacement has become an established treatment for adults with aneurysms of the ascending aorta, but there is limited experience in children, for whom the advantages of avoiding valve prostheses are particularly attractive. The incidence of aortic aneurysm with severe Aortic regurge in pediatric age group is quite low except in children with Marfan syndrome. While the majority of pediatric patients with aortic root aneurysms have various forms of connective tissue disorders, other diagnostic groups have emerged, such as patients with various forms of congenital heart disease and non-syndromic thoracic aortic aneurysms. We present our experience with valve-sparing procedures in pediatric patients, highlighting the technical aspects of the operation as well as some of the pitfalls and complications.

PATIENTS AND METHODS:

The valve sparing aortic root replacement operation is an extensive procedure requiring multiple long suture lines and many carefully orchestrated steps to ensure optimal valve geometry. 8 Years old boy, 30 Kg diagnosed as Marfan syndrome with classic Marfan criteria was presented to Aboelriesh specialized children hospital, with Huge Aortic aneurysm impending rupture and severe Aortic regurge. Echocardiography and MSCT showed that the aortic annulus was 39 mm (z value +6.7) with hugely dilated sinus 66 mm (z value + 8.8) and the Aorta at the sinotubular junction was 55 mm

(z value +11.2). LVED was 5.5cm, LVES was 4.5cm. EF was 41%. Dilated aortic arch (z value +0.6) and echocardiography showed regurgent jet starts from descending Aorta, i.e. severe Aortic regurge.

RESULTS:

Tyron David valve sparing procedure was done to preserve the Aortic valve, and the Ascending Aorta was replaced by Dacron graft 30 mm. Ischemic time was 95min, and total bypass time was 125min. postoperative hemodynamics were excellent given satisfactory postoperative valve performance. The total ventilation time in the ICU was 6Hrs and total ICU stay was 72Hrs. Total Hospital stay was 7 days. The Postoperative Echo showed Trivial AR. The patient was discharged from the Hospital on Aspirin 1.5mg/Kg, Diuretics and Ace inhibitors. Six Months follow up showed improved LV function with regression in LV end diastolic and end systolic diameters with Trivial AR.

CONCLUSION:

All efforts must be paid to avoid Aortic valve replacement in pediatric age group with ascending aortic aneurysm with severe Aortic regurge .Aortic valve sparing procedures are feasible in the pediatric age group to avoid the possible complications of Anticoagulation in this age Group. The reimplantation procedure is preferred. Late aortic insufficiency and pseudo aneurysm formation remain late concerns.