

MP1-16

Cone reconstruction for Ebstein's anomaly: What defines the need for additional bidirectional cavopulmonary anastomosis?

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Objectives: We aimed to investigate whether the tricuspid valve (TV) diameter after "cone reconstruction" (CR) as primary biventricular, "anatomical" correction of Ebstein's anomaly decisively influences the need for additional bidirectional cavopulmonary anastomosis (BCPA), s.c. "one-and-a-half" repair.

Methods: Retrospective echocardiographic analysis of the postsurgical TVannulus in 4-chamber view (mean value of 4 measurements) in patients who underwent CR between 06/2013 and 12/2015, determination of the Z scores (Detroit) and correlation with the bi or "one-and-a-half" result.

Results: Thirty patients (median age 4 (6 months-36) years, median weight 18.6 (6.6-74) kg) received a CR, 14 (52%) of them with and 16 (48%) without BCPA. An additional pulmonary valve repair or replacement was necessary in 7 patients.

There was no mortality and the early postsurgical course was uneventful (median duration of the mechanical ventilation 19 hours and hospital stay 8 days) except for temporary ECMO support in one patient. Central venous pressure at the end of the operation was in median 12 mmHg and showed no correlation with BCPA necessity. According to the Carpentier classification of tricuspid valve dysplasia (class A: 2 (6%), B: 7 (23%), C: 16 (53%), D: 3 (10%)) we found no correlation with regard to BCPA. Postsurgical TV regurgitation was absent in 13 (43%), low in 13 (43%) and mild in 4 (14%) patients. The mean diameter of the TV annulus and equivalent Z score were significantly lower ($p=0.002$ and $p=0.01$, respectively) in the patients who needed an additional BCPA.

Conclusion: The resultant diameter of the TV created using CR seems to be co-decisive: in the case of Z score > -2 the additional BCPA may be avoided even with severe dysplasia of the TV; however, it seems to be necessary with smaller TV diameter/Z score. Intraoperative TV-Z score determination after cone reconstruction may be helpful in the decision-making with regard to "biventricular" or "one-and-a-half" correction of the Ebstein anomaly.