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Commentary: Kids are not little adults, but there is no reason they cannot be helped with adult tools

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Kalagos and colleagues¹ have provided the congenital surgical community with another case in which outside-the-box thinking and adaptive use of a standard adult prosthesis was used to help a congenital patient. Their patient was post-arterial switch and ventricular septal defect closure who started with an abnormal tricuspid valve and experienced worsening tricuspid regurgitation, right ventricular dilation, and clinical sequelae of portal venous hypertension. The patient had already undergone a valve repair that had failed and had a hypoplastic annulus.

Their solution was to perform valve replacement using a prosthesis designed for aortic valve replacement in adults. Such an adaptation has been reported previously using Melody valves in both tricuspid² and mitral³ positions, Sapien valves in the right ventricular outflow tract,⁴ and transcatheter valve-in-valve applications in various congenital pathologies.⁵ Their choice of the Sapien valve over the Melody valve was thoughtful and aimed at a larger patient with an eye toward potential serial dilation to rehabilitate the tricuspid annulus. Indeed, dilation of balloon-expandable prostheses as a child grows is a proven concept.³

The authors also borrowed heavily from the adult playbook in the operation using a right thoracotomy approach and performing the operation on a beating heart. Many adult surgeons will perform tricuspid interventions on a beating heart to get real-time feedback on the conduction system and right coronary artery. In this case, the beating heart was chosen to also monitor the potential impact of valve

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The author and daughter with a different kind of adult tool while constructing the family home.

CENTRAL MESSAGE

Congenital surgeons need knowledge of catheter-based prostheses in adult cardiac surgery. In a growing number of circumstances, the use of these devices has been adapted to aid our younger, smaller patients.

expansion on the left ventricular outflow tract—a smart choice!

The lessons from this experience are to stay “tuned in” to what is happening in the world of heart surgery at large and not be afraid to try to fit a round peg into something slightly less than a round hole. Congenital surgeons are masters of improvisation and dealing with situations not previously encountered. This case is an excellent reminder that there is no reason why our toolbox should not include all the adult tools.

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