Both of these studies can be interpreted to support the choice for early cAVSD repair in young infants failing medical management. At the least, early repair represents a sound strategy with outcomes similar to staging; at the most, it represents a superior, one-operation strategy associated with improved outcomes. When faced with this challenging decision, this experience advocates for primary repair as the advancing, forward move, and invites and encourages increased pursuit of this strategy, even in neonates.

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Commentary: To band or not to band—is that really the question?

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CENTRAL MESSAGE

Comparing outcomes in staged versus early complete repair for complete atrioventricular septal defects is most impacted by the inter-stage course for patients receiving a pulmonary artery band.

Surgical repair of complete atrioventricular septal defect (AVSD) provides a unique technical challenge for congenital heart surgeons. Approaches and timing for repair form the basis of significant discussion among care providers. Described approaches regarding number of patches to employ and how best to divide and reconstruct the atrioventricular valves are numerous. In addition, the challenge of timing for complete repair when considering the need to address symptomatology versus the concerns for valve tissue fragility, especially within the neonatal period, can create decision-making dilemmas. Significant disparity exists within the literature in regards to outcomes for early primary complete repair.[1,2]

Buratto and colleagues[3] from Royal Children's Hospital in Melbourne, Australia, present an insightful manuscript describing their single institutional experience with early surgical intervention for complete AVSD in patients younger than 3 months of age. In a study cohort of 194 patients, 151 (77.8%) underwent primary complete repair, whereas 43 (22.2%) underwent initial placement of a

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pulmonary artery band (PAB). They employed a data analysis strategy of 3:1 propensity matching to describe improved early and late survival and similar rates of left atrioventricular valve reinterventions when pursuing a strategy of early complete repair.

The manuscript is strengthened by its use of propensity matching as a mechanism to compare these 2 surgical options; however, the manner in which matching is undertaken has inherent limitations. Although this strategy allowed for the group to match data variables such as age, birth weight, and the diagnosis of trisomy 21 well, it was not as strong when comparing variables such as degree of heart failure, level of atrioventricular valve regurgitation, or other significant clinical factors employed in surgical decision-making. It is important to note that children who had PAB placement were overall younger, had lower birth weight, and less commonly a diagnosis of trisomy 21. In addition, the interstage mortality for patients undergoing PAB placement was 18.6%, which is quite disparate from early mortality for primary repair, which was 3.3%. Perhaps even more importantly, the survival outcomes were similar for both groups when looking more specifically at those patients who initially underwent PAB and subsequently received a complete repair versus initial complete repair (2.9% vs 3.3%).

The difficulty in determining surgical disposition for neonates and infants younger than 3 months of age who require intervention for complete AVSD remains significant. Surgical and institutional biases often determine which option to employ when facing these unique clinical scenarios. The group from Royal Children's should be applauded for their excellent surgical outcomes in neonates and infants undergoing primary complete repair for AVSD. Their study describes a concerning mortality rate for patients undergoing PAB within the interstage period. They describe similar short- and long-term outcomes for patients who survive to staged repair versus those who underwent primary complete repair. Their findings should place an increased focus upon the determination of whether PAB placement will allow for successful arrival to staged repair. Using data-driven approaches to answering this particular question is likely the most powerful message of the manuscript.

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