Author has nothing to disclose with regard to commercial support.

INTRAOPERATIVE BALLOON DILATION IN TETRALOGY OF FALLOT: IS THERE A “SECRET SAUCE”?

Reply to the Editor:

Drs Vida and Stellin are to be congratulated for doggedly pursuing techniques that render pediatric cardiac surgery less morbid. One of the areas they are known for is the use of intraoperative balloon dilation in tetralogy of Fallot surgery. In their hands, intraoperative balloon dilation is only 1 step within a comprehensive management of the pulmonary valve during tetralogy of Fallot repair.¹ They have championed the use of more complex plasty maneuvers, including surgical delamination of hypoplastic or dysplastic leaflets, as well as patch reconstruction of damaged leaflets. Our unit has had a similar approach, using the same calibration of balloons they describe, aiming for an increase of the pulmonary annulus (after commissurotomy and balloon dilation) of 2 to 3 mm. However, our own results, specifically regarding long-term avoidance of reinterventions, have not been as good as the results reported in this letter.

Although I agree with the criticism that the choice of balloon size may have been too aggressive in Boston, resulting in a 20% rate of leaflet tears,² I don't agree with this letter's conclusion, which is that their results are superior simply because they size their balloons differently and perform different (or more aggressive) leaflet pasty maneuvers. The study by Hofferberth and colleagues² is a matched cohort analysis of 162 patients, a statistically speaking superior design, whereas the data from Padua are purely historical/retrospective data, which render biases such as hindsight bias almost impossible to eliminate. One may also ask why this technique has not been adopted widely. As far as published data, only Boston, Padua, and New York³ are on the map. It may be time to actively engage other centers, debate the technique in an open forum, and try to move the field forward.

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<https://doi.org/10.1016/j.jtcvs.2018.02.073>

VALVE-SPARING REPAIR IN TETRALOGY OF FALLOT: DOES VALVE BIOLOGY DETERMINE LONG-TERM OUTCOME?

Reply to the Editor:

We appreciate the interest of Drs Vida and Stellin in our study and their thoughtful comments. We commend the Padova group for their innovative technical approaches to valve-sparing tetralogy of Fallot (ToF) repair.¹⁻³ Over the past decade, several valve-sparing techniques have been reported, but comprehensive long-term follow-up data have been lacking. As a consequence, valid assessment and comparison of surgical approaches remains a significant challenge.

The goal of our study was to comprehensively evaluate the midterm outcomes of a single valve-sparing repair technique performed at our center in 162 consecutive patients with ToF-pulmonary stenosis over the past decade. We found that valve-sparing repair with intraoperative balloon dilation is associated with a 15% early reintervention rate for residual valvar stenosis, the development of progressive pulmonary regurgitation, and subsequent right ventricular dilation.⁴ We believe these suboptimal results warrant careful reevaluation of the role of valve-sparing repair in the management of ToF-pulmonary stenosis. Moreover, these outcomes suggest that we, as a surgical community, may be best served to consider the impact of biological substrate on long-term valve function.

In our study, we observed that patients who underwent valve-sparing repair with intraoperative balloon dilation exhibited significant growth of the pulmonary valve annulus, with normalization of the annular z-score at midterm follow-up.⁴ Yet, over the same follow-up period, the cohort developed progressive pulmonary regurgitation, suggesting that valve leaflet growth was not commensurate with annular growth. This finding raises an intriguing