

Letter to the editor regarding article by Dehghan et al.: “Biventricular strain and strain rate impairment shortly after surgical repair of tetralogy of Fallot in children: A case-control study”


To the Editor,

We have read the article by Dehghan et al.¹ with great interest. They demonstrated diminished left ventricular (LV) and right ventricular (RV) global function in patients with repaired tetralogy of Fallot by speckle tracking echocardiography, during short-term follow-up after pulmonary valve interventions. While the paper indeed brings insight into the delicate nature of biventricular functions following corrective surgery in this special patient cohort, there are a few points that need to be explained by the authors. First, given the differential effects of different interventions on right ventricle functions depending on the right ventricle and right ventricle outflow tract manipulation and the extent of residual load on the right and so on the left ventricle, the degree of RV and LV dysfunction would be expected to vary among these different corrective surgeries. As a result, analyzing the postoperative LV and RV strain values combining these groups might be misleading. For this reason, it would be really nice if authors could also provide differential effects of different approaches on LV and RV functions.² Second, childhood is a period of rapid changes in body size and hence cardiac size and function, and even relatively small differences in gender and age might serve as confounders in the analysis. In fact, previous studies in adults and in infants have demonstrated significant sex and age-related variation in LV and RV strain values.^{3,4} Therefore, adjustment of the analyses for these potential confounders seems warranted. Alternatively, the control group could have been matched on sex and age. Lastly, previous studies have demonstrated deterioration of the myocardial strain in short-term follow-up following cardiac surgery, which might partially or completely recover.² The authors did not mention the distribution of the exact timing of the echocardiographic evaluation, which I think is crucial for the design of this study.

TRANSPARENCY STATEMENT

The lead author (Ferit O. Mutluer) affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted;

and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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