Impairment of tricuspid annular plane systolic excursion and tricuspid annular peak systolic velocity after ventricular septal defect correction

Martin Koestenberger* and William Ravekes*

Division of Pediatric Cardiology, Department of Pediatrics, Medical University Graz, Graz, Austria

* Corresponding author. Department of Pediatrics, Medical University Graz, Auenbruggerplatz 34/2, A-8036 Graz, Austria. Tel: +43-316-38584276; e-mail: martin.koestenberger@medunigraz.at, koestenbergerm@gmx.at (M. Koestenberger).

Received 18 March 2013; accepted 20 April 2013

Keywords: Heart septal defects · Ventricular · Cardiopulmonary bypass · Echocardiography · Tissue doppler imaging · Child

We read with interest the article ‘Disparity in right vs left ventricular recovery during follow-up after ventricular septal defect correction in children’ by Klitsie et al. [1]. In our opinion, this is an interesting manuscript describing a possible long-term effect of open-heart surgery on the remodelling of the right ventricle (RV) in children with ventricular septal defect (VSD). The authors found a reduced tricuspid annular plane systolic excursion (TAPSE) and tricuspid annular peak systolic velocity (S) in their VSD patients compared with age-related normal values and that RV systolic performance, in contrast to LV systolic performance, remained significantly impaired up to 20 months postoperatively. We completely agree with the findings of Klitsie et al. [1] that this decrease of RV systolic performance after surgical correction of VSD may be due to the detrimental effects of open-heart surgery with cardiopulmonary bypass. We wish to mention that in children after open-heart surgery for tetralogy of Fallot, the TAPSE and S values are decreased and also worsen continuously over time [2]. Performing VSD subtype analyses, Klitsie et al. [1] found no significant difference in echocardiographic parameters, perhaps due to the small size of this subgroup. For the convenience of the readership of the European Journal of Cardiothoracic Surgery, we would like to mention that, in our opinion, if a comparison of TAPSE and S data from their VSD patients with available TAPSE and S paediatric normal values and Z-scores [3, 4] is made, this lack of statistical power in their subgroup analysis could be overcome. Klitsie et al. [1] also support the notion that the RV is highly susceptible to postoperative function impairment in paediatric patients with a VSD. We would like to thank the authors for addressing the need for careful and systematic evaluation of the RV in patients with congenital heart diseases before and after surgical correction. We hope that, with more interesting studies like this from Klitsie et al. [1], the quantification of systolic RV function will become a routine measurement in postoperative VSD patients.

REFERENCES


