Conclusion Traumatic VSD closure is required because of the acute hemodynamic changes. Transcatheter closure is effective. Complications are frequent because of the critical clinical status.

The author hereby declares no conflict of interest

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Neonatal left ventricular 2D strain to predict aortic coarctation

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Background Although coarctation of the aorta could be suspected prenatally, the diagnosis is not certain before birth and remains difficult in the neonatal period especially when ductus arteriosus is open. 2D strain, a recent echocardiographic tool to assess myocardial performance, allows the early detection of abnormal myocardial deformation.

Objective The aim of this study was to assess the accuracy of left ventricular 2D strain to predict aortic coarctation in neonates with patent ductus arteriosus.

Patients and Methods This was a single centre prospective study. Neonates with patent ductus arteriosus and prenatal/postnatal suspicion of isthmic coarctation were included. Left ventricular (LV) 2D strain was performed for each patient. Patients were divided into three groups: those who developed coarctation (group 1, n=9), those who had normal aorta after ductal closure (group 2, n=10), and a control group of healthy neonates with patent ductus arteriosus (group 3, n=20).

Results The median age of gestation was 38±4 weeks of amenorrhea and the median birth weight was 3.088kg. The inter observer agreement was good for the assessment of LV 2D strain. Although radial strain was significantly decreased in group 1 (17.76 vs 40.19 in group 2, p<0.001), there was only a trend in the alteration of longitudinal and circumferential strain (-16.34 vs -16.84, p=0.059 & -10.41 vs – 13.88, p=0.053 respectively).

Conclusion LV 2D strain seems to be effective for the early diagnosis of aortic coarctation before the ductus arteriosus closes.

The author hereby declares no conflict of interest

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Right ventricular form and function after surgical closure of atrial septal defect

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Background Surgical closure of ASD is a safe and effective means of eliminating interatrial shunting. The response of the right heart by age to this intervention is incompletely understood. We sought to assess the right heart’s response by echocardiographic parameter over a five-year follow-up period.

Methods Twenty-one consecutive patients had a surgical closure for ASD (9 sinus venosus and 12 defect with rim deficiency). We define two groups, group 1 formed with patients aged under 12 years at the moment of the surgery and group 2 with patients aged over 12 years old. The patients were assessed with echocardiography, before the procedure and at 1, 2 and 5 years.

Results The mean ASD size was 26±7.4mm. The difference between the two groups at one year was significant, four-chamber right ventricular (RV) size (21 vs. 25mm/m²), paradoxical septal motion (38% vs. 50%), right atrial length (24 vs. 27mm/m²), RV fractional area change (RVFAC) (38% vs. 34%), tricuspid lateral annular systolic velocity (S') (11 vs. 9cm/s), RV dP/dt (530 vs. 380), isovolumic velocity and isovolumic acceleration (IVA) (3.4 vs. 2.2 m/s²), and echocardiographically determined pulmonary artery systolic pressure decreased significantly and was maintained at 5 years follow-up only in group 1. At 5 years, 39% of patients had persistent RV enlargement in group 2.

Conclusions Right heart morphology undergoes rapid improvement within one year of defect closure in young patients (<12 years) while patients aged over 12 years had less improvement and persistent RV enlargement or pulmonary hypertension, or both, at five year.

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