

## MP2-7

### Right Ventricular Myocardial Deformation in Adult Patients with a Repaired Atrial Septal Defect.

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#### Objectives:

Patients with atrial septal defect (ASD) have right ventricular (RV) volume overload caused by left to right shunting or anomalous venous return. Using speckle-tracking echocardiography, we evaluated regional RV and left ventricular (LV) deformation in adult patients with repaired ASD in childhood in comparison with healthy controls.

#### Methods:

Echocardiogram including the standard apical views was acquired in adult patients with repaired ASD and in healthy controls. With speckle-tracking echocardiography, we analyzed longitudinal strain of the RV lateral wall, LV septum, and LV lateral wall. Cardiac magnetic resonance imaging (CMR) was performed in 47 (92%) ASD patients.

#### Results:

We included 104 subjects: 51 with repaired ASD (39% male, age  $43.3 \pm 4.9$  years, age at repair  $7.9 \pm 3.6$  years) and 53 healthy controls (49% male, age  $29.7 \pm 6.8$  years). RV global longitudinal strain (GLS) of the lateral wall was significantly lower in ASD patients than in controls, especially of the apical segment (Figure 1). RV GLS correlated significantly with CMR derived RV and LV end-diastolic volume ( $r=0.49$ ,  $p=0.014$  and  $r=0.43$ ,  $p=0.034$ ), and with RV and LV end-systolic volume ( $r=0.53$ ,  $p=0.005$  and  $r=0.46$ ,  $p=0.019$ ). LV GLS was similar between the ASD patients and controls.

#### Conclusions:

Although the ASD repair was performed in childhood, RV longitudinal strain is still significantly reduced in adult patients long after surgery. Especially the strain of the apical segment is reduced suggesting that apical function is more affected in these RV overloaded ventricles.

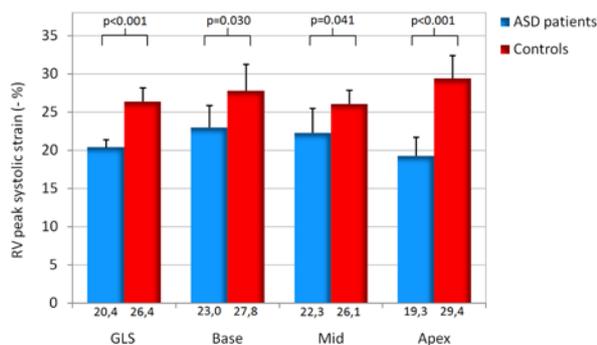


Figure 1. Right ventricular global and segmental longitudinal strain of the lateral wall.