**THREE-DIMENSIONAL SPECKLE-TRACKING ECHOCARDIOGRAPHIC ASSESSMENT OF RIGHT VENTRICULAR FUNCTION IN OBSTRUCTIVE SLEEP APNEA - EFFECTS OF CPAP THERAPY**

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**Objective:** Obstructive sleep apnea (OSA) can affect right ventricular (RV) performance even in the absence of systemic hypertension and other known cardiac or obstructive pulmonary disease. The aim of the present study was to evaluate RV function in OSA by three-dimensional (3D) echocardiography and speckle tracking echocardiography (STE) and analyze changes after continuous positive airway pressure (CPAP) treatment.

**Method:** Thirty-nine patients with OSA without comorbidities and thirty-nine controls were studied with 3D-echocardiography and STE. Sixteen patients underwent CPAP therapy and were studied before and after treatment. RV 3D ejection fraction was calculated. Peak-systolic strain was determined. RV dyssynchrony was defined as standard deviation of the six time to peak-systolic strain values.

**Results:** 3D RV ejection fraction was lower and RV dyssynchrony was greater in patients with moderate-severe OSA compared to controls both in the presence and absence of pulmonary hypertension. 3D RV ejection fraction and RV dyssynchrony were independently associated with apnoea-hypopnea index. Patients treated with CPAP had significant changes in RV parameters.

**Conclusion:** 3D RV ejection fraction and RV dyssynchrony were abnormal in OSA patients compared to controls and associated with OSA severity. RV-3D-STE abnormalities improved after chronic application of CPAP.