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**LEFT VENTRICULAR REMODELLING IN BARIATRIC PATIENTS: STUDY WITH 4D ECHOCARDIOGRAPHY AND STRAIN**

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**Purpose** The aim of this study was to examine left ventricular (LV) echocardiographic indices, 4D volumes and ejection fraction of bariatric patients (BMI >40).

**Methods** Forty-nine consecutive normotensive bariatric patients (31 women (63.2%), 43 Caucasian, mean age: 45.7±9.7 years, BMI ≥40 kg/m<sup>2</sup>) were examined with 3D and speckle tracking echocardiography pre-bariatric surgery and they were compared with an age-matched group of 30 healthy volunteers. Exclusion criteria were coronary artery disease, cardiomyopathies and arrhythmias. Statistical analysis was performed with SPSS V.14.0 and Medcalc softwares. All indices were indexed to body surface area and heart rate, where appropriate.

**Results** Common comorbidities comprised diabetes mellitus (N=7), fatty liver (N=8), hypertension (N=8) and sleep apnoea (N=12). 2D echocardiography demonstrated dilatation of the left atrium in bariatric patients when compared to healthy volunteers (39.2±1.9 vs 32.3±2.6 mm, p<0.01); LV end-diastolic diameter was increased (49.2±4.8 vs 42.9±3 mm). 4D values demonstrated an increase in LV end-diastolic volume (182.5±47.7 vs 116.1±15.9 ml); LV ejection fraction was preserved, however lower when compared to healthy volunteers (57.8±7.4 vs 68.4±5.9%). LV mass was also greater in bariatric patients (107.5±28 vs 84.7±11.6 g). When performing strain with Echopac, there was a contraction delay of global strain in bariatric patients when compared to healthy volunteers (p<0.05).

**Conclusions** Bariatric patients demonstrate increase of LV mass, dilatation of the ventricle and signs of diastolic heart failure with preserved ejection fraction.