



## Pericardial/Myocardial Disease/Pulmonary Hypertension

### LONG-TERM CHANGES IN EPICARDIAL ADIPOSE TISSUE AFTER BARIATRIC SURGERY: A CMR STUDY

Poster Contributions

Poster Sessions, Expo North

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Epicardial adipose tissue (EAT) is metabolically active and releases a variety of adipokines with a potential role in obesity-related heart damage. Little information exists regarding changes in EAT following bariatric surgery.

**Methods:** Morbidly obese patients accepted for bariatric surgery were consecutively recruited. In each case, CMR was performed on a 1.5 T scanner before surgery and 1 year after the procedure. SSFP cine and double IR images were acquired in the 3 orthogonal axes. Manual tracings of the EAT were performed covering both ventricles, as well as endocardial and epicardial ventricular contours. Blood glucose and triglyceride levels were obtained before and after the procedure.

**Results:** 16 patients (81.25% female) reached 1 year follow-up. EAT decreased by 27%, and LV mass decreased by 14% (the table). Glucose and triglyceride levels showed significant amelioration.

**Conclusions:** Patients undergoing bariatric surgery show a significant decrease in the amount of epicardial adipose tissue and LV mass 1 year after the procedure. This reduction is accompanied by a substantial improvement in metabolic control.

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Table legend. Data are expressed as mean  $\pm$  mean standard error. BMI= Body mass index. EAT= Epicardial adipose tissue. LVmass: left ventricular mass. LVED: LV end diastolic volume. LVES: LV end systolic volume. LVSV: LV stroke volume. LVEF: LV ejection fraction.

CMR quantification of epicardial fat and LV parameters before and after bariatric surgery.

| n=16                     | PRE                 | POST                | p value  |
|--------------------------|---------------------|---------------------|----------|
| BMI (kg/m <sup>2</sup> ) | 47.43 $\pm$ 5.80    | 31.65 $\pm$ 4.48    | P=0.0001 |
| EAT (mm <sup>3</sup> )   | 807.19 $\pm$ 321.96 | 590.33 $\pm$ 270.23 | P=0.024  |
| LVMAS (g)                | 114.93 $\pm$ 27.30  | 99.92 $\pm$ 28.66   | P=0.016  |
| LVED (ml)                | 158.33 $\pm$ 24.30  | 158.27 $\pm$ 28.76  | P=0.988  |
| LVES (ml)                | 56.51 $\pm$ 21.76   | 57.03 $\pm$ 16.93   | P=0.87   |
| LVSV (ml)                | 101.90 $\pm$ 26.03  | 101.25 $\pm$ 17.22  | P=0.932  |
| LVEF (%)                 | 64.17 $\pm$ 12.58   | 64.21 $\pm$ 6.22    | P=0.989  |
| Glucose (g/dL)           | 103.8 $\pm$ 6.26    | 83.9 $\pm$ 3.36     | P=0.007  |
| Triglycerides(mg/dL)     | 136.50 $\pm$ 16.13  | 93.8 $\pm$ 9.85     | P=0.022  |