BARIATRIC SURGERY IS ASSOCIATED WITH LEFT VENTRICULAR EJECTION FRACTION IMPROVEMENT IN OBESE PATIENTS WITH SYSTOLIC HEART FAILURE

Poster Contributions
Poster Sessions, Expo North
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Introduction: Obesity is one of the most important public health challenges and an established risk factor for incident heart failure (HF). Bariatric surgery has the potential to achieve marked weight loss and also remission of diabetes, dyslipidemia and hypertension. However it remains unclear whether significant improvements in left ventricular ejection fraction (LVEF) can be expected after bariatric surgery in systolic HF patients.

Hypothesis: We hypothesized that obese patients with systolic HF would show an improvement in LVEF after bariatric surgery.

Methods: A single-institution retrospective review identified 35 patients with systolic HF who had bariatric surgery from 1/2004 to 12/2011. Fifteen patients had pre- and post-operative echocardiographic images available, with initial LVEF <50%. These 15 subjects were matched to 15 obese controls with HF but no bariatric surgery. Two echocardiographic readers independently evaluated the same apical images, blinded to patient status.

Results: The subjects and controls were well matched for baseline age (51.7 years), gender (53% female), LVEF (39.1% ±2.5 vs 42.1% ±1.8, p=0.39) and interval between echocardiograms (37.9 ±5.6 vs 36.2 ±3.8 months, p=0.63). The surgical group had a higher baseline BMI (48.3 ±3.2 vs 38.9 ±1.7 kg/m², p=0.02) and trended towards more coronary artery disease (60% vs 27%), diabetes (67% vs 53%) and hypertension (93% vs 60%). The commonest surgery was Roux-en-Y gastric bypass (60%). As expected, most surgical subjects lost significant weight (delta BMI -9.3 ±1.9 kg/m², range +2.3 to -23.0 kg/m², p=0.0002 from baseline), which was not seen in controls (delta BMI -0.5 ±0.7 kg/m², p=0.42). Despite significant co-morbidities, there was a mean pre/post LVEF improvement for subjects of +6.5% ±2.3 (range -5.7% to +21.7%, p=0.01), but not in controls (+1% ±2.3, p=0.65). Importantly, post-operative change in LVEF did not correlated with systolic blood pressure change (r=0.08, p=0.78), or echocardiographic interval (r=−0.10, p=0.73).

Conclusion: We observed a significant improvement in mean LVEF for 15 systolic HF patients post-bariatric surgery, which was unrelated to blood pressure change or time from surgery.