**MARKED REGRESSION OF LVH IN FAMILIAL HYPERTROPHIC CARDIOMYOPATHY** **FOLLOWING BARIATRIC SURGERY AND SUBSTANTIAL WEIGHT LOSS**

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**Background:** Obesity is associated with left ventricular (LV) hypertrophy (LVH) and may influence the phenotypic expression of familial hypertrophic cardiomyopathy (HCM). It has been shown that obese patients with HCM have larger LV mass and higher degrees of labile obstructive hemodynamics. Our goal was to evaluate the effect of weight loss after bariatric surgery on the cardiac phenotype of adults with HCM.

**Methods:**We retrospectively identified4 patients (age 44-69 years, all women) with HCM who underwent bariatric surgery for morbid obesity (BMI 41-52). Two underwent Roux en y gastric bypass and lost 98 and 110 lbs over 6 and 12 months, respectively. Two others underwent laparoscopic sleeve gastrectomy and lost 10 and 25 lbs only. Pre- and post-operative transthoracic echocardiography (TTE) were compared.

**Results:** Of the 2 patients who underwent gastric bypass,patient 1 had baseline apical HCM and had initially presented with an out of hospital cardiac arrest. A follow up TTE done several months post operatively showed marked regression of LVH. This was associated with complete resolution of ECG T wave inversions. Patient 2 had initially presented with chest pain, palpitations and lightheadedness. She had dynamic LV outflow tract obstruction (49 mmHg at baseline and 64 mmHg with provocation), asymmetric septal hypertrophy and systolic anterior motion of anterior mitral leaflet at baseline. These findings resolved after weight loss with a new resting LV outflow tract gradient of 16 mmHg and 25 mmHg with provocation. This was associated with resolution of repolarization abnormalities on ECG. In patients with modest weight loss after sleeve gastrectomy, there was no change in cardiac phenotype.

**Discussion.** HCM phenotype can be influenced by several modifiers including hypertension, obesity and strength training. The findings have important implications for risk stratification and long term management of HCM patients with modifiable risk factors.