**BODY SURFACE AREA-INDEXED LEFT ATRIAL VOLUME PARADOX AFTER SURGICAL TREATMENT FOR MORBID OBESITY**

G.H. Yao, L. Navaravong, J. Abboud, J. D'Amours, A. King, **L. Jiang**

Div. of Cardiology, Baystate Medical Center, Tufts University School of Medicine, Springfield, MA, USA

Objectives: Studies have shown left atrial volume (LAV) indexed to body surface area (BSA) underestimates the LA size in obese population due to the disproportionately larger BSA. We aimed to evaluate how the use of LAV/BSA paradoxically show LA enlarging after surgically-induced weight loss in obese patients.

Methods and results: We reviewed 17 morbidly obese patients with body mass index (BMI)> 40 kg/m2 who underwent surgical treatments (gastric bypass 7 and gastric banding 10) and had echocardiograms both before (within 6 months) and after (>1 year) the operation. Patients with cardiomyopathy and severe valve disease were excluded, which resulted in 15 patients (mean age 52.4 ± 10.6 years, 53% male). LAV was measured using biplane Simpson’s method on digitally recorded imaging. LAV index was determined by BSA and by height. After a follow-up of 2.2 ± 0.6 years, there was a significant decrease in weight, BMI and BSA. LAV and LAV/height only showed a trend of decrease without significance. However, LAV/BSA paradoxically increased significantly.

Conclusions: The study demonstrates that BSA/**LAV** paradoxically increased in morbidly obese patients after successful surgically induced weight loss. This paradox again implies that BSA/**LAV** is inappropriate in the assessment of LA size in this obese population.

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| Clinical and echo data at baseline and follow-up |
|  | Baseline | Follow-up | p value |
| Weight (kg) | 137.2 ± 21 | 95.7 ±18.7 | < .001 |
| BMI (kg/m2) | 47.3 ± 8.1 | 33.7 ± 6.4 | < .001 |
| BSA (m2) | 2.52 ± 0.4 | 2.1 ± 0.4 | < .001 |
| LAV (ml) | 70.6 ± 23 | 67.3 ± 19 | > .05 |
| LAV/height (ml/m) | 41.9 ± 6.7 | 40.3 ± 8.3 | > .05 |
| LAV/BSA (ml/m2) | 27.8 ± 8.3 | 32.1 ± 7.8\* | < .05 |
| \* Paradoxically increased at follow-up |