

## THE CONCEPT OF OBESITY YEARS: OUTCOMES VARIATION BY AGE AMONG MORBIDLY OBESE PATIENTS UNDERGOING LAPAROSCOPIC SLEEVE GASTRECTOMY (SG)

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**Introduction:** While results after bariatric surgery in older patients are known, comprehensive analysis of BMI and obesity co-morbidities by age after SG has not been reported.

**Objective:** To identify variation in post-operative BMI and resolution of obesity co-morbidities along a spectrum of age groups among patients undergoing SG.

**Methods:** Data from 8,966 Surgical Review Corporation BOLD database adult patients who underwent SG was analyzed retrospectively in six age groups: <30 (n=922), 30-40 (n=2224), 40-50 (n=2560), 50-60 (n=2322), 60-70 (n=816), and >70 (n=52). Clinical information was collected at pre-operative baseline and at 2, 6, 12, 18, 24, and 36 months after SG. Data included BMI and 30 weight-related co-morbidities, diagnosed by BOLD clinical definitions (DeMaria, SOARD 6 (2010) 347-355). Statistics: ANOVA for continuous variables and a General Linear Model that included baseline and post-operative data, modified for binomial distribution of dichotomous variables.

**Results:** 12 months post-SG, BMI ranged from 33+-7 (60-70 years) to 35+-6-17 (40-50, 50-60, >70) (p<0.01) and 35+-7 to 36+-9 at 24 months (p<0.05 only 30-40 v 60-70). At 12 months, abdominal hernia, congestive heart failure, diabetes, hypertension, dyslipidemia, obstructive sleep apnea, musculoskeletal pain, stress urinary incontinence (p<0.0001), impaired functional status (p<0.01, back pain, lower extremity edema, and pulmonary hypertension (p<0.05) varied directly by age (n=12), with increasing -incidence/ decreasing co-morbidity resolution as age increased. Conversely, persistence of mental health diagnosis, polycystic ovarian syndrome, substance abuse and tobacco abuse all varied inversely with age, decreasing in incidence with advancing years (p<0.05, n=4). At 24 months, diabetes, hypertension, hyperlipidemia, lower extremity edema and musculoskeletal pain still varied directly with age, affecting older patients more frequently versus younger age groups.(p<0.05, n=5). Cholelithiasis, GERD, liver disease, obesity hypoventilation syndrome, panniculitis, angina, asthma, depression, gout, peripheral vascular disease, pseudotumor cerebri, psychological impairment, and support group attendance did not vary by age.

**Conclusion:** Following SG, minimal but statistically significant BMI variation by age was not clinically important. Nevertheless, resolution of 12 weight-related co-morbidities was inversely proportional to age at 12 months, while four others resolved better in older patients. The key serious co-morbidities diabetes, hypertension, dyslipidemia, musculoskeletal pain, and leg edema increased with advancing age at 24 months. These results suggest the concept of "obesity years" in which obesity co-morbidities become entrenched in older patients who were obese the longest. One might speculate that this advance knowledge could facilitate patient selection for SG.

