VIDEO BASED ASSESSMENT AND SURGICAL OUTCOMES IN BARIATRIC SURGERY

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Introduction: The purpose of this study was to investigate the relationship between surgical skill as measured by Global Evaluative Assessment of Robotic Skills (GEARS) score and post-operative outcomes including excess weight loss (EWL) at 6 and 12 months, readmission, re-operation, and serious morbidities in patients undergoing Roux-en-Y gastric bypass (RYGB) and duodenal switch (DS).

Methods: Patients undergoing RYGB or DS within a single health system from January 2019 to January 2021 were prospectively captured. GEARS score is a validated Likert scale for evaluating technical skill. A third party of crowd-sourced evaluators assigned GEARS scores to each of these RYGB and DS cases. The variables underwent a univariate screen along with a multivariable linear regression, and the highest (1st) quartile performing GEARS scores were compared with the lowest (4th) quartile. Outcomes included EWL at 6 months, EWL at 12 months, OR time, estimated blood loss, readmission, reoperation, and serious (Clavien-Dindo 2) morbidity.

Results: Of 104 patients, serious morbidity occurred in 20 (19%), readmission in 12 (12%), re-operation in 9 (8.7%), ED visit within 30 days in 16 (15%), and ED visit in 31-90 days in 10 patients (9.6%). The highest quartile of GEARS score, compared with the lowest quartile, was associated with increased EWL at 12 months (p=0.02) on unadjusted analysis. On multivariable regression, GEARS score predicted an increase in the dependent variable of EWL at 6 months (p=0.047) when adjusted (for BMI, comorbidities, ASA), but not at 12 months (p=0.164). Of note, 36% of patients (37/104) were lost to follow-up at 6 months, and an additional 30% (20/67) were lost to follow-up at 12 months.

Conclusions: In patients undergoing RYGB or DS, the highest quartile of GEARS score as a validated proxy for surgical skill was correlated with increased EWL at 6 months, suggesting that high level robotic skills might result in more weight loss post-operatively. While EWL at 12 months and major morbidity events were not found to be significant on multivariable regression, this is possibly due to loss to follow-up.

Outcome	Total n = 104	
Serious morbidity	20	19%
Readmission	12	12%
Reoperation	9	8.7%
ED within 30 days	16	15%
ED in 31-90 days	10	9.6%

Outcome as predicted by GEARS	P Value
Increased EWL at 6 months	*0.047
Increased EWL at 12 months	0.164
Major morbidity events	0.609