Predictability of Robotic Sleeve Gastrectomy Operative Times

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Introduction

Bariatric surgery has been performed almost exclusively by laparoscopy but now is beginning to see a transition towards robotic surgery. The Da Vinci Surgical System has been shown to reduce postoperative pain and length of stay in bariatric patients. Additionally, the robot offers improved ergonomics and better visualization for the surgeon. Due to the direct surgeon benefits, this study hypothesized that operative times would not vary with increased BMI as seen in laparoscopy.

Methods

A retrospective review of our institution's MBSAQIP data was performed in order to correlate operative time to BMI. Patients who underwent robotic sleeve gastrectomy were included in this study. Patients were divided into groups based on BMI (<39.9, 40-49.9, 50-59.9, >60) at the time of surgery. BMI <39.9 was utilized as a baseline for comparison of operative times.

Results

Data was collected from May 2018 to December 2019. During this interval a total of 71 consecutive robotic sleeve gastrectomy procedures were performed. All cases were performed by a single surgeon at a single institution. The average BMI in this study was 43.6. The average operative time for all robotic sleeve gastrectomy procedures was 170 minutes. The mean operative time was 167 for BMI <39.9; 167 for BMI 40-49.9; 183 for BMI 50-59.9; and 178 for BMI >60. There was no statistically significant difference among operative times with increased BMI (p-value >0.05 in all comparisons).

Conclusion

The direct surgeon benefits offered by the Da Vinci Surgical System allow surgeons to adapt to increased BMI without lengthening the operative time. This predictability allows the surgeon to more accurately plan the patient's perioperative needs such as patient and family expectations, re-dosing antibiotics, and operative room time allotment.

Table 1. Operative Times for BMI groups

BMI Range	Average Time (min)	Standard Deviation (min)	Additional Time to Baseline (min)	p-value
<39.9	167	25		
40-49.9	167	24	0	>0.05
50-59.9	183	29	16	>0.05
>60	178	26	11	>0.05