Robotic Platform Advantages for Reoperative Bariatric Surgery

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BACKGROUND

Up to 20% of bariatric operations eventually need a revisional re-operation, presenting distinct technical challenges to surgeons.

Revisional bariatric operations pose a greater risk of postoperative complications such as leaks, extended ICU stays, and lengthy hospitalizations. Traditionally, open surgery was required due to the dense adhesions and altered anatomy in affected patients.

The advent of laparoscopy led to improved re-operative outcomes. However, the robotic platform with its improved dexterity and visualization is potentially superior in tackling the increased pathologic complexity. Revisional surgery has over a 20% conversion to laparotomy rate. We investigated short-term outcomes of totally robotic re-operative bariatric surgeries performed at a high-volume academic medical center.

OBJECTIVE

To investigate outcomes of robotic bariatric reoperations performed at a high-volume academic medical center by a single surgeon



METHODS

- Single-surgeon, retrospective, observational study of a prospective registry of 47 obese adults who underwent robot-assisted bariatric reoperations between 1/2016–12/2019
- Clinical indications: weight loss failure, reflux/dysphagia, hiatal hernia, anastomotic stricture, marginal ulcer, intussusception and chronic fistula from gastric sleeve leak
- Data collection source: the Metabolic and Bariatric Surgery Accreditation Quality Initiative Program
- ***Primary outcome: 30-day complication rate***
- Secondary outcomes: rates of complications (leak, abscess, stricture, bleeding etc.), 30-day readmissions/reoperations/interventions and conversion to open

RESULTS

Robotic Reoperations (n=47)	Complication rate (%)
30-day Major complication rate (e.g. anastomotic leak, obstruction, bleeding, CVA, DVT/PE)	**10.6% -Leak: 8.5% -Obstruction: 8.5% -CVA: 2.1% -Bleeding, DVT/PE: 0%**
30-day return to operating room	8.5% -anastomotic leak
30-day minor complication rate (e.g. dehydration, marginal ulcer, stenosis/stenting)	6.4% -dehydration
30-day readmission rate	17%

DISCLOSURES

Dr. Davis serves as a consultant for Intuitive Surgical, Inc. The rest of the authors have no commercial associations that might be a conflict of interest in relation to this article.

CONCLUSIONS

As more index bariatric operations are performed each year, there is a rising need for improving the quality of revisional bariatric surgery skills and technologies. Newer robotic technologies need to be investigated as feasible options for re-operative bariatric surgery. Due to weight recidivism and technical challenges of re-operative foregut surgery, laparoscopy and open surgery exert a greater physical toll on the surgeon, compared to robotic surgery. Improved ergonomics of robotic platforms are advantageous to bariatric surgeons. We conclude that robotic platforms are a safe alternative to traditional laparoscopy with equivalent adverse events and outcomes for re-operative bariatric surgeries.

- Our major complication rate 10.6% compared with Nasser *et al.* review from MBSAQIP found 13-27%.
- There were no obstructions, significant bleeding or DVT/PE adverse events. No patient was converted to laparotomy.
- 15% acceptable cutoff for complication rate among experienced surgeons.
- Fully robotic reoperations are safe and feasible with ergonomic surgeon advantages

References

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