

MAGNETIC-ASSISTED ROBOTIC SURGERY IN REDUCED-PORT LAPAROSCOPIC BARIATRIC PROCEDURES:
165 CASES BY A SOLO-SURGEON

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INTRODUCTION

- !! Magnetic-Assisted Robotic Surgery (MARS) combines magnetism and robotics to enhance visualization and control in minimally invasive surgery.
- !! The system uses two robotic arms (7 degrees of freedom) and a magnetic grasper to retract tissue and improve surgical exposure.
- !! Previous studies in laparoscopic procedures (cholecystectomy, bariatric, renal) have shown promising results, but most include fewer than 100 patients, highlighting the need for larger studies.

METHODS

- | A retrospective, single-center study using consecutively enrolled patients who underwent bariatric surgery between November 2024 and August 2025 was conducted.
- | A single-surgeon performed all the procedures, using the magnetic grasper to retract the adipose tissue and the stomach rather than just the liver, as is commonly done.
- | Outcomes analyzed included operative time, 30-day postoperative device-related complications, hospital readmission rates, and mortality.



Figure 1. MARS platform

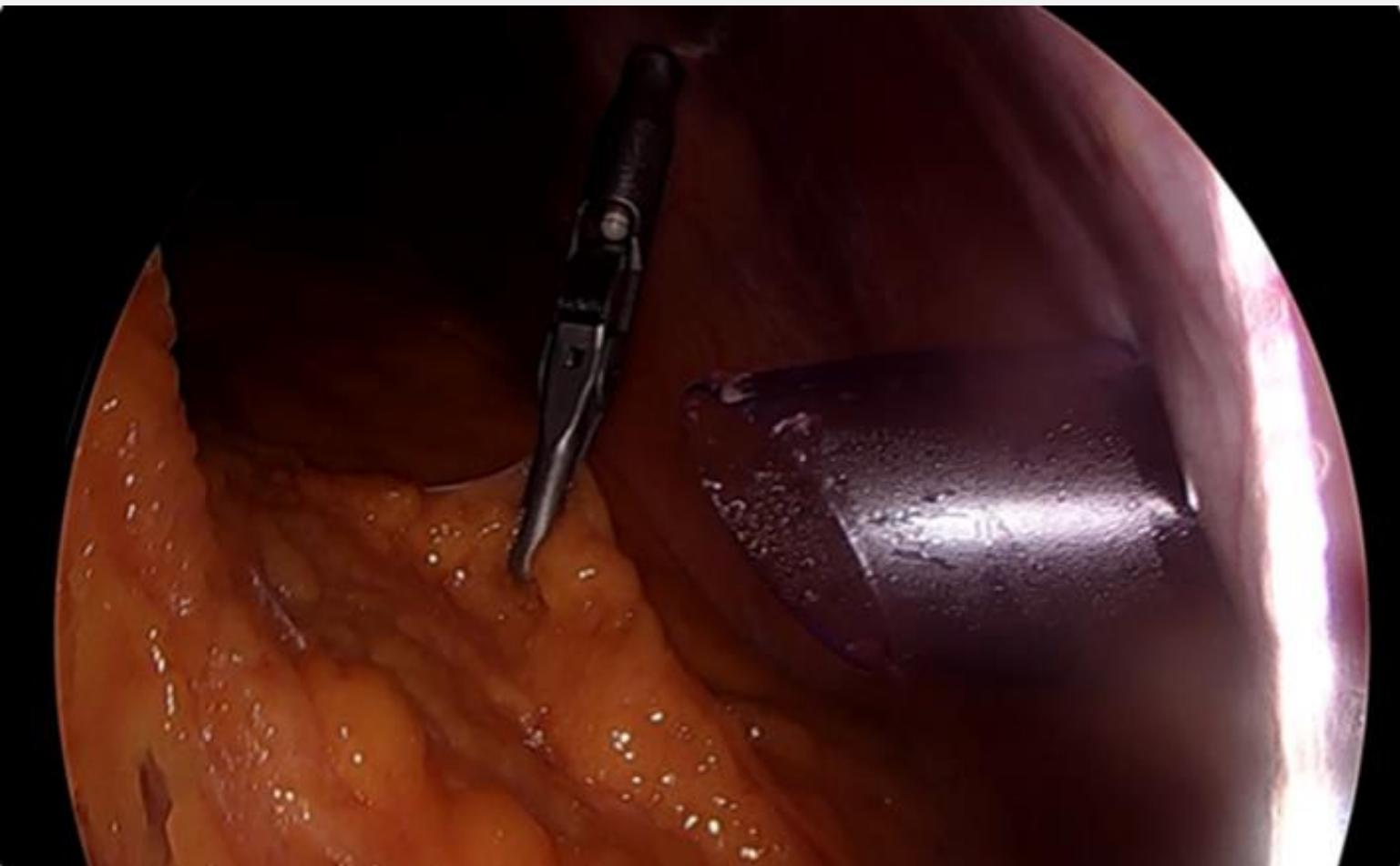


Figure 2. Adipose tissue retraction

OBJECTIVE

To evaluate the efficacy and safety of the Magnetic-assisted robotic surgery using a novel technique.

RESULTS

Characteristic	Total
Sex	135 (81.81) females 30 (18.19) males
Age (years)	36.33 ± 9.26
Body Mass Index	41.26 ± 6.32

Table 1. Sociodemographic characteristics

Outcome	Sleeve (n=131)	Bypass (n=34)
Median operative time (min)	35[range: 20–100]	80 [range: 55–115]
Device-related complications	0	0
Mortality	0	0
Hospital readmission	1 (hematoma and hemoperitoneum)	0

Table 2. Postoperative results

CONCLUSION

- !! The findings suggest that this novel technique utilizing MARS is a safe and effective approach when performed by a solo-surgeon in reduced-port robotic laparoscopic bariatric procedures, providing robust evidence that aligns with previous studies.
- !! This approach provides enhanced surgeon control and improved visualization, contributing to greater maneuverability and efficiency during surgery.