

FIRST 132 SOLO-SURGEON LAPAROSCOPIC CASES USING MAGNETIC ASSISTED ROBOTIC SURGERY

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INTRODUCTION

- Magnetic-Assisted Robotic Surgery (MARS) is a novel platform that enhances surgeon control and visualization in minimally invasive surgery.
- The system provides direct control of instruments and the surgical field, eliminating the need for a surgical assistant.
- Early studies report promising results in laparoscopic procedures.

METHODS

- A retrospective study was conducted, including patients undergoing reduced-port laparoscopic surgery assisted by MARS (Figure 1) from February 2024 to August 2025.
- A solo-surgeon (Figure 2) performed surgeries without a surgical assistant.
- Outcomes were surgical time, 30-day postoperative complications, hospital readmission rates, and deviations from hospital protocol.

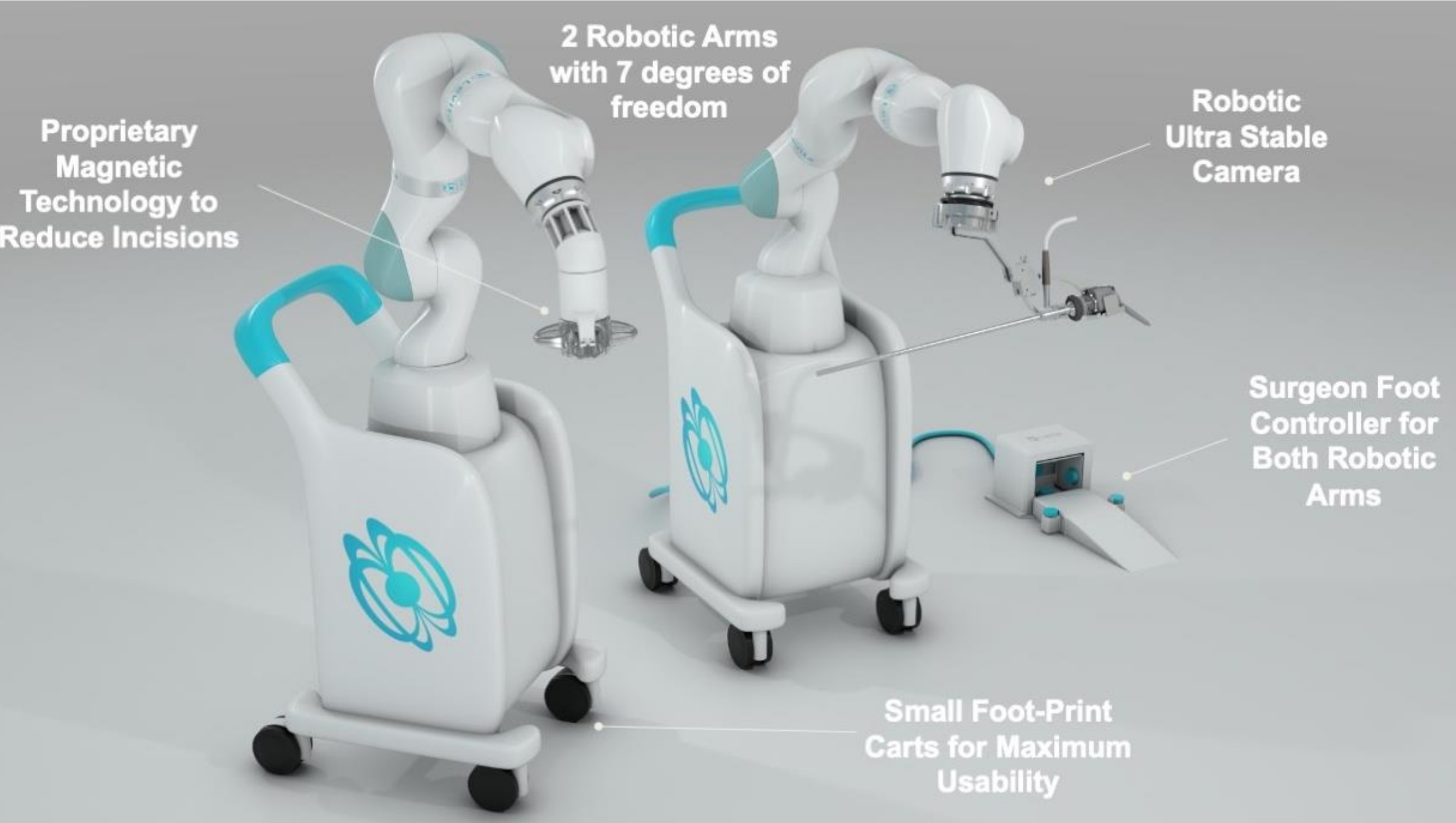


Figure 1. MARS platform



Figure 2. Solo-surgeon procedures

OBJECTIVE

To report the initial 132 cases of solo-surgeon MARS, evaluating its safety and effectiveness.

RESULTS

Variable	Result
Patients (F/M)	132 (112/20)
Mean (SD) age (years)	49.4 ± 14.4
Main procedures (n)	Cholecystectomy (114), Gastric sleeve (8), Gynecologic (7), Chole + hernia (3)
Port reduction	≥1 port in all cases
Median operative time (min, range)	51 (27–120) 49 minutes (27–95) (cholecystectomy)
30-day complications (n)	1 (bile peritonitis)
30-day readmissions (n)	0
Deviation from protocol (n)	0

CONCLUSION

- MARS is safe and effective in reduced-port robotic laparoscopic surgery.
- This 132-case series is among the largest reported and expands its use across multiple procedures.
- Findings support MARS as a reliable platform that enhances surgeon autonomy and precision in minimally invasive surgery.