FIRST CLINICAL TRIAL OF THE LEVITA ROBOTIC PLATFORM: TAKING MAGNETIC SURGERY TO THE NEXT LEVEL

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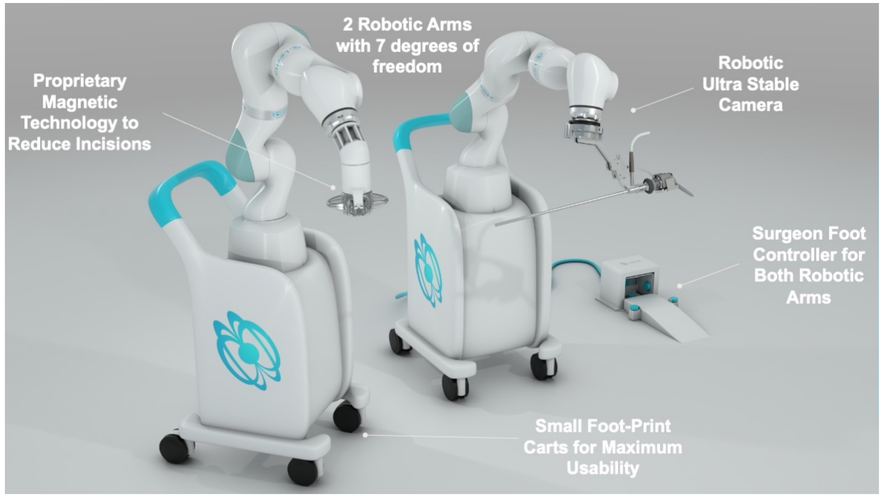
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INTRODUCTION

- Surgeon's are constantly searching for technologies to improve patient outcomes and improve OR efficiency.
- Magnetic Surgery® has been developed to increase the benefits of minimally invasive surgery. Levita Magnetics (Menlo Park, CA) started by developing the Magnetic Surgical System, first FDA cleared system that uses magnetic fields to enhance retraction and exposure during abdominal surgery. This novel technology reduces the invasiveness of procedures and clinical results showed reduced pain, less complications, less scaring and shorter length of hospital stays (1,2,3).
- Robotic surgery increases the control that the operating surgeon has over the instruments. Nevertheless, up to date, robotic surgery has demonstrated limited clinical benefits to patients in the GI space when compared with conventional laparoscopy.
- An innovative robotic platform has been developed, as a means to maximize the benefits for the patient and increase surgeon control and visualization.
- This is the first reported use of a robotic platform of this kind in patients.

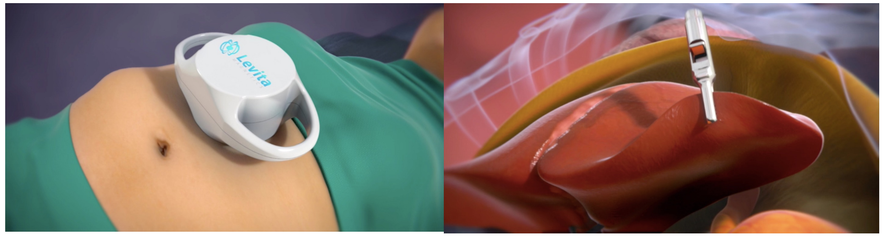
DESCRIPTION OF THE TECHNOLOGY

- The Levita Robotic Platform is comprised of two seven-degrees-of-freedom robotic arms that provides control to an external magnetic controller and a laparoscopic camera. The external magnetic controller is connected to an inner grasper in order to reduce the number of incisions. The second robotic arm provides the control of the laparoscopic camera to the surgeon, giving an ultra-stable view of the surgery. The system is console-free, keeping the surgeon next to the patient in the sterile field at all times.



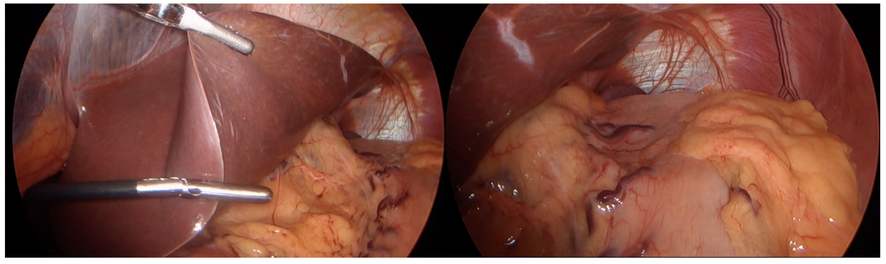
RESULTS (N=24 PATIENTS)

Bariatric procedures (16 gastric sleeves and 1 gastric by-pass) with BMI range of 30-50 Kg/m2	17
Acute cholecystitis	4
Elective same-day discharge cholecystectomies.	3



SAFETY AND EFFICACY OF MAGNETIC RETRACTION

Severe device related adverse event	0
Reduced Port Technique- %	100%



CONCLUSION

- This study demonstrates the combination of magnetic and robotic technologies in one integrated system used for the first time in patients. The Levita Robotic Platform reduced patient invasiveness and increased surgeon control and visualization. This proof-of-concept human study opens new opportunities in the evolution of surgery.

(1) Welsh LK, Guerron D, Portenier D, et al. Magnetic Liver Retraction Decreases Postoperative Pain and Length of Stay in Bariatric Surgery Compared to Nathanson Device. JLAS 2021 31:194-202
(2) Rivas H, et al. Magnetic Surgery: Results From First Prospective Clinical Trial in 50 Patients. Annals of Surgery 2018,267:88-93
(3) Haskins IN, Kroh MD, et al. Magnetic surgery: first U.S. experience with a novel device. Surg Endosc 2018,32:895-899