Robotic Bilateral Inguinal Hernia Repair: Perioperative and Short-Term Outcomes from an Internal Plug and Patch Method

Daanial Iqbal[1]; Jessica Cutler MD[2]; Emily McNabb[1]; Jessica Zaman MD[2]

[1]*Albany Medical College, 43 New Scotland Avenue, Albany NY*
[2]*Department of Surgery, Albany Medical Center*

BACKGROUND

- Inguinal hernias are the most commonly diagnosed type of hernia, affecting one in three men in their lifetime.
- Minimally invasive inguinal hernia repair (IHR) offers the ability to address bilateral pathology simultaneously.
- Robotic IHR is criticized for elevating cost without adding substantial benefit to conventional laparoscopy.
- We argue that the added dexterity of the robotic system allows for innovation of the laparoscopic approach which can improve outcomes.
- In this study, we examine perioperative outcomes for bilateral robotic IHR using a minimally invasive "plug and patch" method, involving preperitoneal keyhole mesh placement and mesh plug placement into the deep inguinal ring.

OBJECTIVES

- To appreciate the safety and efficacy of robotic IHR using the plug and patch technique, as evidenced by low recurrence rates after surgery at Albany Medical Center.
- To provide data to help surgeons make informed decisions about inguinal hernia repair techniques in order to minimize adverse patient outcomes and inguinal hernia recurrence.

RESULTS

Patient Characteristics	
Number of Patients	106
Age (years)	54.17 ± 14.1
BMI (kg/m^2)	28.5 ± 6.0
Male (%)	83
Prior Hernia Repair (%)	25.5
Recurrent Cases (%)	14.2
Concomitant Umbilical Hernia Repair (%)	43.3
Concomitant Incisional Hernia Repair (%)	12.3
Concomitant Component Separation (%)	1.8
Mean NRS11 Pain Score at 30 Days	1.7
Mean OR Time (minutes)	115.1 ± 47.1

- One hundred and six robotic bilateral IHRs were performed over 2 years. Mean age was 54.17 ± 14.1 years and BMI was 28.5 ± 6.0 kg/m2. Eighty-three percent of patients were male, 25.5% had a prior hernia repair, and 14.2% had a recurrent inguinal hernia. Concomitant primary umbilical hernia repair was performed in 43.3%, 12.3% underwent concomitant incisional hernia repair, and 1.8% underwent concomitant component separation (eTEP or TAR). One patient also underwent robotic prostatectomy.
- At 30-day follow-up, there were no readmissions or reoperations. A single emergency room visit was reported for. No early recurrences were reported.
- Pain score at 30 days averaged 1.7 using the numeric rating scale (NRS11), with 75% of patients reporting no pain at their follow-up visit. Mean OR time was 115.1 ± 47.1 minutes, when including concomitant procedures.

METHODS

- A retrospective chart review of 106 patients who underwent bilateral robotic inguinal hernia repair at Albany Medical Center from 2017-2018 was completed.
- Patient demographics and co-morbidities, hernia characteristics, concurrent procedures, peri-operative variables, and short-term post-operative outcomes were determined.

CONCLUSIONS

- Robotic-assisted surgical repair is a rapidly growing technique that is being recruited by hospitals countrywide. The presence and frequency of RIHR is sure to increase in the coming years.
- Robotic bilateral IHR using the plug and patch technique is safe with good peri-operative outcomes. The technique is compatible with simultaneous preperitoneal repair of ventral hernias and component separation.

REFERENCES

1. Berndsen MR, Gudbjartsson T, Berndsen FH. *Laeknabladid*. 2019;105(9):385-391. doi:10.17992/lbl.2019.09.247
2. HerniaSurge Group. International guidelines for groin hernia management. *Hernia*. 2018;22(1):1-165. doi:10.1007/s10029-017-1668-x
3. Edelman DS. Robotic Inguinal Hernia Repair. *Am Surg*. 2017;83(12):1418-1421.
4. Pirolla EH, Patriota GP, Pirolla FJC, et al. INGUINAL REPAIR VIA ROBOTIC ASSISTED TECHNIQUE: LITERATURE REVIEW. Arq Bras Cir Dig. 2018;31(4):e1408. Published 2018 Dec 6. doi:10.1590/0102-672020180001e1408
5. Neumayer L, Giobbie-Hurder A, Jonasson O, et al. Open mesh versus laparoscopic mesh repair of inguinal hernia. *N Engl J Med*. 2004;350(18):1819-1827. doi:10.1056/NEJMoa040093
6. Burcharth J. The epidemiology and risk factors for recurrence after inguinal hernia surgery. *Dan Med J*. 2014;61(5):B4846