Robotic Inguinal Hernia Repair Reduces the Need for Subsequent Contralateral Inguinal Hernia Surgery

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BACKGROUND

- An inguinal hernia is the bulging of the abdominal contents through a weak spot in the abdominal wall of the groin region.[1]
- Contralateral inguinal hernias have been found to be present 12% of the time during the primary surgery and 10% of the time at a 10-year follow up.[2,3]
- There are three surgical approaches that can be performed to treat an inguinal hernia: open, laparoscopic, and robotic.
- The contralateral side is routinely explored in robotic surgery (r-TAPP). The contralateral side is generally not explored in the open and laparoscopic (TEP) approaches due to more dissection of tissue being required.

STUDY AIM

Asymptomatic contralateral inguinal hernias are found during robotic surgery, and repair of these hernias at the time of the initial surgery will help reduce the number of subsequent contralateral hernia surgeries patients need, while not increasing overall risk to the patient.

METHODS

- IRB-approved retrospective study from electronic health records
- **Statistical Analysis**
  - Statistical analysis was completed using the statical software program R, version 4.2.3 and assessed with a significance level of $p<0.05$.
- **Inclusion Criteria**
  - Patients who underwent a primary initial inguinal hernia repair from Jan. 1, 2017 – Dec. 31, 2023.
- **Exclusion Criteria**
  - Patients who have had a prior inguinal hernia repair
  - Age less than 18 years old at time of surgery
  - Urgent or emergent surgeries that had an ED to hospital admission

RESULTS

Table 1. Patient demographics

Characteristics	N = 1,456
Sex	
Female	135 (9.3%)
Male	1,321 (91%)
Body Mass Index (BMI)	
Underweight [0, 18.5)	0 (0%)
Normal [18.5, 25)	170 (12%)
Overweight [25, 30)	963 (67%)
Obese [30+]	303 (21%)
Unknown	20

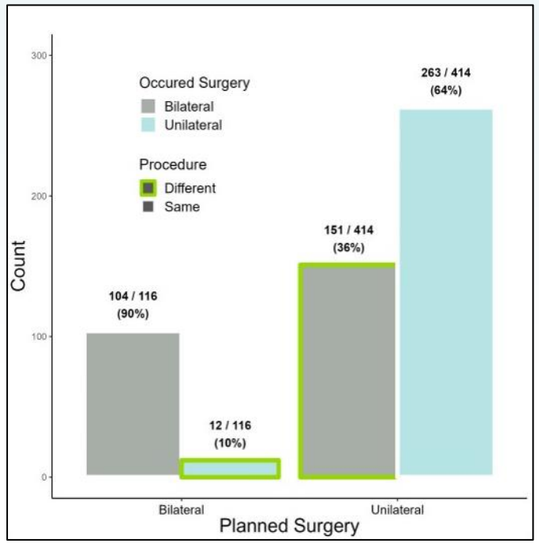


Figure 1. The proportion of planned versus occurred procedures for the robotic inguinal hernia repair population.

Table 2. Surgical demographics

Type of Surgery	N = 1,456	Unilateral	Bilateral
Open	744 (51%)	722	22
Laparoscopic	182 (13%)	95	87
Robotic	530 (36%)	275	255

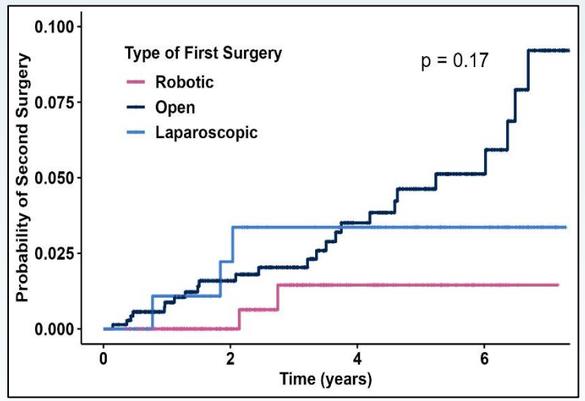


Figure 2. A Kaplan-Meier time to event graph determining the probability of needing a second surgery.

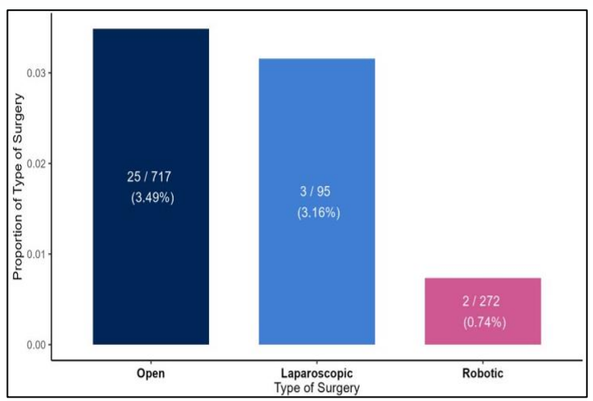


Figure 3. The proportion of type of surgery that had a second, contralateral surgery.

CONCLUSIONS

- 36% of the time, a contralateral inguinal hernia was found intraoperatively in robotic surgery.
- Only 3.5% of open surgeries and 3.16% of laparoscopic surgeries had a subsequent contralateral occurrence requiring an operation.
- Risk was not increased for patients receiving the contralateral repair. The only significant postoperative outcome was time in OR with those that had a contralateral found intraoperatively taking longer.
- 282 of the 784 patients that had an open or laparoscopic unilateral surgery may have had an asymptomatic inguinal hernia at time of surgery.

LIMITATIONS / FUTURE WORK

- **Limitations**
  - Single institution, retrospective analysis
  - Variable follow-up period
  - Patient may have received surgery at a non-Gundersen institution
- **Future Study**
  - Repeat study with a larger population and longer-term follow-up
  - Cost-analysis

ACKNOWLEDGMENTS

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Scan QR code for references and additional graphs.