Long-Term Outcomes of Laparoscopic Inguinal Hernia Repair in Veterans: Single Center Study

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Abstract

Objective:
Early reports from the Veterans Affairs medical centers, showed worse outcomes following laparoscopic inguinal hernia repair, with higher recurrence (10.1%) and morbidity rates (24.6%) compared to open approach (4.9% and 19.4%, respectively). The aim of this study is to explore outcomes and long-term follow-up of laparoscopic inguinal hernia repair at the VA hospital based in Detroit, Michigan

Methods:
The John D Dingell VAMC surgical database was queried for all laparoscopic inguinal hernia repairs performed between 2013-2018 by a single surgeon using a standard method. Data collection included demographics, operative details, postoperative outcomes, and follow-up visits. Patient phone calls were completed to obtain patient reported data. A p <0.05 was considered to be significant.

Results:
A total of 424 patients were identified. Complications occurred in 91 (21.5%) of patients, including hematoma (12.5%), seroma (5.5%), urinary retention (4.0%), and surgical site infection (1.4%). Increased morbidity was significantly correlated with high CCI (p=0.045), old age (p=0.024), and ASA class ≥III (p=0.018). Overall, there were 43 (10.2%) deaths during the study period with none related to procedural complications.

Conclusion:
Long-term follow-up for veterans who underwent laparoscopic inguinal hernia repair showed low recurrence rate, and low major complications rate. We advocate to use laparoscopic approach as the standard of care for inguinal hernia repair.

Introduction

One of the most frequently performed surgical procedures is repair of the Inguinal Hernia. Worldwide, there are over 20 million inguinal or femoral hernias repaired every year, including over 800,000 in the United States. As the procedure has become more common the potential techniques of repairing them have also broadened. A procedure once with only an open approach can now be repaired with alternative methods including laparoscopic and even robotic. With these new technological advances, have come discourse on which can provide the best outcomes including less

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recurrence and less morbidity. Early reports from a study that followed patients after open versus laparoscopic inguinal hernia repairs at 14 Veteran Affairs (VA) medical centers concluded that open mesh repairs were superior to laparoscopic repairs. They determined that across VA hospitals, there was a noted increased recurrence rate and complication rate following laparoscopic repair versus open repair. question we ask is whether this has evolved as surgeons are becoming more technically comfortable with laparoscopic procedures.

With this project, our goal was to recognize a more focused and local review of laparoscopic hernia repairs and their potential rates of complications and recurrences. The aim is to assess these rates with our focus on a single institution, The John Dingell Detroit Veterans Affairs Medical Center (VAMC) in Detroit, Michigan and interrogated data from all laparoscopic hernia repairs in a time frame from a single surgeon.

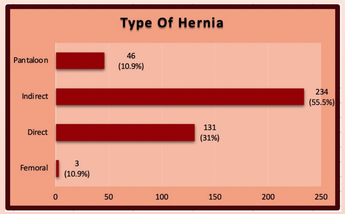
Measured Complications	
Postop Admission	70 (16.6%)
LOS, day (median ± IQR)	1.0 ± 1
Readmission	16 (3.8%)
Conversion to open	5 (1.2%)
Reoperation	9 (2.1%)
Recurrence by images or PE	12 (2.8%)
Morbidity	90 (21.3%)
SSI	6 (1.4%)
Hematoma	52 (12.3%)
Seroma	23 (5.5%)
Urine retention	17 (4.0%)
Follow up period	30.4 ± 24.8
Recurrence reported by pt	5 (1.2%)
Chest pain	39 (9.2%)
Feeling the mesh	20 (4.7%)
All cause mortality	43 (10.2%)
Contacted postop	196 (46.4%)

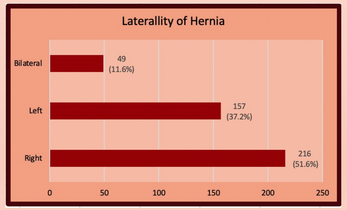
Demographics	
Gender (Male)	421 (99.8%)
Age	62.9 ± 12.2
BMI	25.8 ± 4.4
ASA ≥III	263 (62.3%)
Smoker (Current)	165 (39.1%)

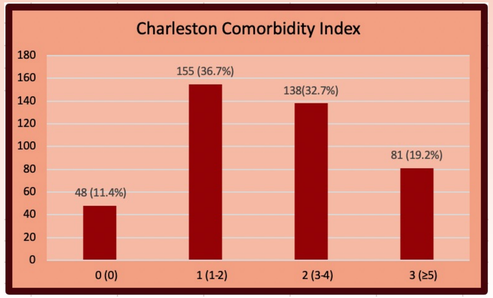
Surgical Demographics	
Recurrent Hernia	37 (8.8%)
Previous abdominal surgery	166 (39.3%)
Preop CT scan	116 (27.5%)
Operative time	93.8 ± 28.5
EBL, cc (median ± IQR)	10 ± 5

Methodology

The John D Dingell VAMC surgical database was queried for all laparoscopic inguinal hernia repairs performed between 2013-2018 by a single surgeon using a standard method. Data collection included demographics, operative details, postoperative outcomes, and follow-up visits. Patient phone calls were completed to obtain patient reported data. A p <0.05 was considered to be significant.







Results

A total of 424 patients were identified [99.8 % male, mean age 62.9 years, 50.9% >65 years, mean BMI 25.8, 23.1% obese, 62.2% had ASA class ≥III, 19.6% had high Charlson Comorbidity Score (CCS) (>4), and 75.1% current smokers]. 34.7% had imaging preoperatively, 7.7% of hernias were recurrent, 11.6% were bilateral and 39.5% had previous abdominal surgery. Mean operative time was 1.6 hr, and 1.2% were converted to open. 19.6% were admitted postoperatively with mean length of stay 2.2 days, 3.8% required readmission, and 2.1% required reoperation. Complications occurred in 91 (21.5%) of patients, including hematoma (12.5%), seroma (5.5%), urinary retention (4.0%), and surgical site infection (1.4%). Increased morbidity was significantly correlated with high CCS (p=0.045), old age (p=0.024), and ASA class ≥III (p=0.018). Patients were followed up 0-85 months, with a mean of 30.4 months. Phone calls follow-up was performed for 46.2%, patients reported 2.8% recurrence, 21.7% chronic pain, and 11.1% feeling the mesh. Overall, there were 43 (10.2%) deaths during the study period with

Conclusion

Long-term follow-up for veterans who underwent laparoscopic inguinal hernia repair showed low recurrence rate, and low major complications rate. We advocate to use laparoscopic approach as the standard of care for inguinal hernias repair.

Acknowledgements

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