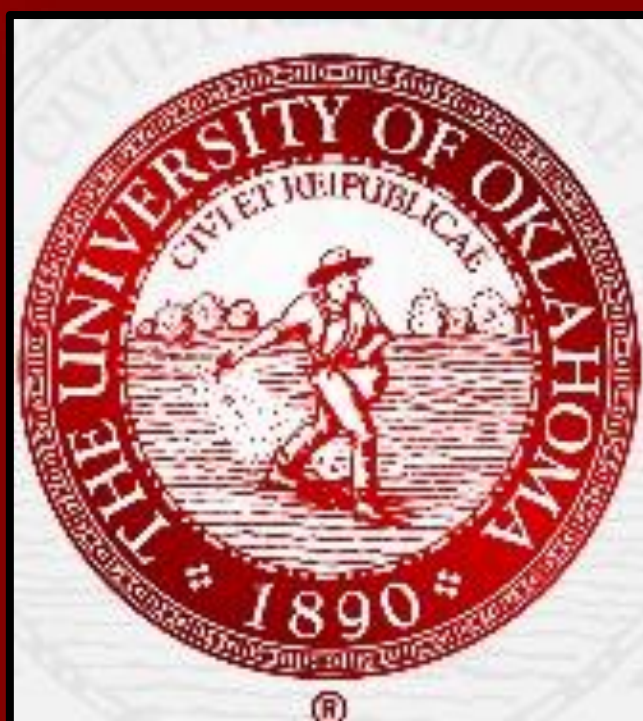




Predictors of Complications after Elective Laparoscopic Incisional Hernia Repair: A NSQIP Analysis

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BACKGROUND

- Incisional hernias (IH) not uncommonly have surgical complications.
- Defining predictors of complications for incisional hernia repair (IHR) may help with surgical planning and preoperative optimization in high-risk patients.
- The purpose of this study is to evaluate factors associated with complications after elective laparoscopic IHR, using the American College of Surgeons National Surgical Quality Improvement Program (NSQIP) database.

METHODS

- We performed a retrospective review of NSQIP from 2013-2017. Adult patients with elective laparoscopic IHR as the principal procedure and a post-operative diagnosis of ventral or incisional hernia were included. Recurrent and incarcerated hernias were also included.
- We created composite variables for wound complications (superficial, deep, and organ/space surgical site infection, wound disruption) and major complications (all complications except urinary tract infection and superficial wound infection).
- 30-day re-admissions, Re-operations, wound complications, major complications, and mortalities were analyzed.
- Regression analysis was used to identify independent predictors of major complications.

RESULTS

- A total of 27,608 patients were studied (mean age 57±13.3 years, 59.6% female). There were 6123 (22.2%) patients listed as recurrent, and 8574 (31.1%) as incarcerated IH.
- The median (interquartile range) of hospital length of stay was 1(2) days.
- At 30 days, 945 patients (3.4%) had unplanned readmissions related to the hernia repair, 389 (1.4%) had unplanned reoperation, 664 (2.4%) developed major complications, 371 (1.3%) had wound complications, and there were 49 deaths (0.2%).

Table – Independent factors associated with 30-day major complications after elective laparoscopic incisional hernia repair

Factors	P Value	Odds Ratio	95% CI
Age≥50 years	0.002	1.37	1.126-1.661
Functional status: partially or totally dependent	< 0.001	3.21	1.883-5.474
Diabetes mellitus	0.007	1.29	1.072-1.549
Severe chronic obstructive pulmonary disease	< 0.001	2.72	2.151-3.443
Congestive heart failure in 30 days before surgery	0.051	2.03	0.996-4.135
Currently on dialysis	0.039	1.94	1.035-3.641
Bleeding disorder	< 0.001	2.28	1.593-3.271
Steroid use for chronic condition	< 0.001	1.85	1.368-2.495

RESULTS (cont.)

- Occurrence of major complications was not higher for recurrent or incarcerated hernia patients.
- Multivariate analysis showed that independent predictors of major complications are: age ≥50 years, diabetes mellitus, poor functional status (partially or totally dependent), severe chronic obstructive pulmonary disease (COPD), congestive heart failure (CHF) within 30 days of surgery (near significant), current dialysis, bleeding disorder, and steroid use for chronic condition (Table).

CONCLUSION

- Laparoscopic IHR has a low morbidity and mortality in an elective setting.
- When planning an elective IHR, higher complication rates are to be expected in elderly patients with comorbidities.
- Preoperative optimization should be considered, especially in high-risk patients, focusing on COPD, CHF, renal failure, glycemic control, steroid usage, and appropriate management of coagulopathy.

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