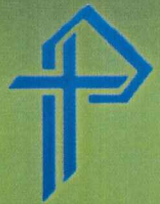




Comparative Analysis and Economic Evaluation of Unilateral Inguinal Hernia Repair Methods



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BACKGROUND

Hernia repair surgeries are one of the most common procedures performed in the United States with an estimated 750,000 surgeries performed yearly. Currently, the surgical options for inguinal hernia repair fall into three categories: open repair, laparoscopic repair, and the recent addition of robotic-assisted repair. Each procedure includes a constellation of benefits and risks for both the cost-effectiveness for the hospital and the patient outcome. By investigating the cost-effectiveness and patient satisfaction for each procedure, data may be obtained to help physicians and patients choose a procedure that is economically favorable for the hospital as well as beneficial for patient outcomes.

METHODS

In this retrospective study, Baylor undergraduate research interns utilized electronic medical records on 100 inguinal hernia repair patients at Providence Health Center and Fish Pond Surgery Center from 2014 to help determine the benefits and risks of three unilateral inguinal hernia repair methods. An additional, personal survey was conducted by phone, with 44 individual responses collected from the same group of patients. This survey determined patient satisfaction in the months following their procedure, details concerning recurrence and complications, and opinions on their personal care at their respective clinics along with their current state of lower abdominal and groin region health as related to their past hernia issues.

SUBJECT CRITERIA

Inclusion criteria

- 18 years or older
- Subject is a unilateral inguinal hernia repair patient in the year 2014
- Procedure type remained the same throughout operation

Exclusion criteria:

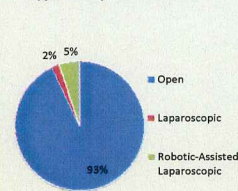
- Less than 18 years old
- Bilateral hernia repair
- Incarcerated hernia
- Non-inguinal hernia repair (ventral, etc.)
- Procedure type changed mid-operation

OBJECTIVE

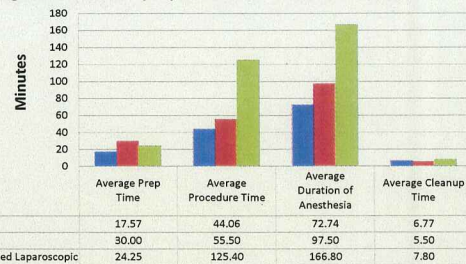
- To determine the cost-effectiveness for each of the different types of unilateral inguinal hernia repair procedures.
- To compare patient satisfaction among the different types of unilateral inguinal hernia repair procedures.

GRAPHS (PATIENT DATA ANALYSIS)

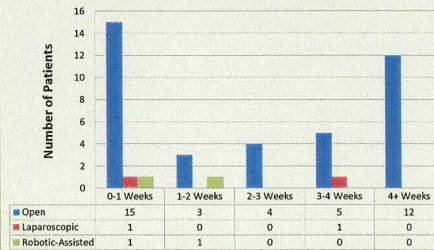
Type of Repair Performed



Surgical Timestamps (based on Procedure Type)



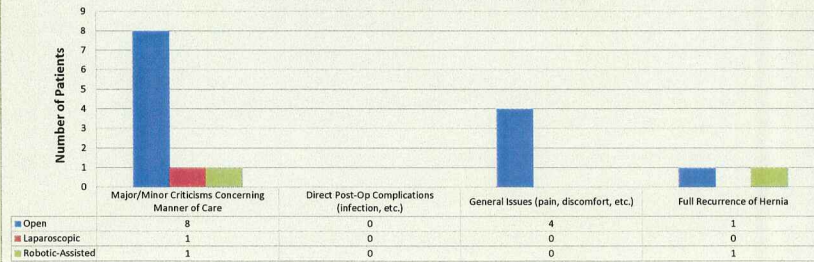
Length of Recovery Time (Survey Patients)



Level of Satisfaction (Survey Patients)

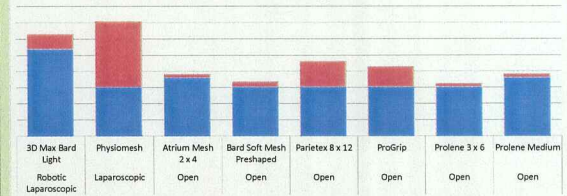


Prevalence of Procedural Issues (Survey Patients)



GRAPHS (ECONOMIC EVALUATION)

Random Sample Patient Charges Based on Procedure Type and Mesh Type



CONCLUSION

According to the study results, open procedures have the shortest duration of surgery and anesthesia, as well as the lowest average cost. However, based on survey data, the other two procedure types had comparable patient satisfaction ratings as well as relatively fast recovery times and fewer post-op complications.

One interesting finding was the variable cost of hernia mesh. Data showed a large difference in procedure cost depending on the type of mesh used. The cost data is proprietary and exact figures are not displayed in the graph above.

CITATIONS

Bittner, R. and J. Schwarz. "Inguinal hernia repair: current surgical techniques." *Langenbeck's Archives of Surgery*, November 2011.

Allison, Nathan et al. "Technical Feasibility of Robot-Assisted Ventral Hernia Repair." *World Journal of Surgery*, December 2011.

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