

THE IMPACT OF SURGICAL TECHNIQUE ON RECURRENCE RATES AFTER INGUINAL HERNIA REPAIR: A RETROSPECTIVE ANALYSIS

Isabela Olga

*Faculty of Medicine, Universitas Tarumanegara
isabelaolga7@gmail.com*

ABSTRACT

Inguinal hernia repair is a common surgical procedure to treat the condition of inguinal hernia, which is the escape of internal organ tissue through a gap or weakness in the lower abdominal wall. After undergoing surgery, the recurrence rate of inguinal hernia may vary. Therefore, it is important to conduct a retrospective analysis to understand the impact of surgical techniques on inguinal hernia recurrence rates. The aim of this study was to analyze the impact of surgical techniques on the recurrence rate of inguinal hernia. This study used a retrospective analysis method. Data were collected from questionnaires and medical records of patients who had undergone inguinal hernia repair surgery at X hospital. The data obtained included information about the surgical technique used, patient characteristics, such as age and gender, and the rate of recurrence of inguinal hernia that occurred after surgery. The collected data will be statistically analyzed using the IBM SPSS program. The results showed that surgical techniques with laparoscopic methods have a lower inguinal hernia recurrence rate than conventional methods. This can be seen from the results of the regression coefficient test with a recurrence rate of 28.7% compared to the conventional method of 32.6%.

Keywords: *Impact, Surgery, Recurrence, Repair, Inguinal Hernia*

This article is licensed under [CC BY-SA 4.0](https://creativecommons.org/licenses/by-sa/4.0/) 

INTRODUCTION

An inguinal hernia is a medical condition in which tissue of an internal organ, such as small intestine or fatty tissue, exits through a gap or weakness in the lower abdominal wall called the inguinal ring. These hernias commonly occur in the groin area or around the groin (Kingsnorth & LeeBlanc, 2003). Inguinal hernias can occur in both men and women, but are more common in men due to the larger and weaker inguinal ring in men. Risk factors that can cause inguinal hernia include abdominal muscle fatigue, advanced age, pregnancy, obesity, and previous history of hernia (Sesa & Efendil, 2015).

Symptoms of inguinal hernia can vary, but the most common is a lump or bulge that can be seen or felt in the groin or groin area. This lump may increase in size during exertion or when pressure in the abdomen increases, such as when coughing, sneezing or straining. Patients may also experience pain or discomfort in the hernia area (Octavியanthi, 2016). Inguinal hernia repair is generally done through surgery. The procedure involves reinserting the discharged organs into the abdomen and strengthening the weak or damaged abdominal wall using sutures or the installation of supportive tissue. The aim of surgery is to relieve hernia symptoms, prevent hernia recurrence, and reduce the risk of more serious complications, such as tissue pinching or bowel obstruction (Nugraha et al, 2022).

The choice of surgical techniques for inguinal hernia includes conventional or laparoscopic methods. The conventional method involves an incision in the abdominal wall to access the hernia and repair it, while the laparoscopic method uses a specialized instrument inserted through a small incision to repair the hernia (Ardiyan et al, 2022). After surgery, good

recovery is usually required to minimize the risk of hernia recurrence and reduce postoperative discomfort. Patients will need to avoid strenuous activity or heavy lifting for several weeks after surgery, and will be instructed on surgical wound care and warning signs of complications.

The recurrence rate of inguinal hernia may vary from one individual to another. Inguinal hernia recurrence refers to a condition where the hernia reappears after a hernia repair procedure. The recurrence rate is influenced by several factors, including the surgical technique used, the characteristics of the initial hernia, the patient's health condition, and other factors. Therefore, it is important to conduct a retrospective analysis to understand the impact of surgical technique on inguinal hernia recurrence rates.

A hernia is a condition in which there is protrusion or prolapse of a peritoneal pouch, organ, or preperitoneal fat through a congenital or acquired defect. A hernia consists of three main components: the ring, the pouch, and the hernia contents. The ring refers to the opening or hole that allows the herniated tissue to escape. The pouch is the sac or pouch that forms when the herniated tissue protrudes through the ring. Hernia contents refer to the tissue or organ that exits through the hernia pouch, such as intestines or fat. In a hernia, a weak or deformed ring allows tissue to protrude through the hernia sac, which can lead to different symptoms and complications depending on the type of hernia and its location (Sabiston, 2010).

An inguinal hernia is a condition in which intestinal organs pass into the abdominal cavity through a gap or weak area of the inguinal ring. The organ commonly involved is the small intestine, but can also involve fatty tissue or the omentum. In this condition, there is protrusion of the organ into the cavity where it should not be. A defect or weakness in the wall of the inguinal ring allows the organs to move out of place and form a visible or palpable lump in the inguinal or surrounding area (Erickson, 2009).

Inguinal hernias can be divided into two main types, namely lateral inguinal hernia and medial inguinal hernia. A lateral inguinal hernia is a type of inguinal hernia that occurs on the outer or lateral side of the inguinal ring. In this hernia, organs such as the small intestine or fatty tissue can exit through a gap or weakness in the wall of the lateral inguinal ring (Rawis et al, 2015). Meanwhile, medial inguinal hernias occur on the inner or medial side of the inguinal ring. In this type of hernia, organs or tissues can appear through a gap or weakness in the wall of the medial inguinal ring (Alfarisi et al, 2021). Classification of inguinal hernias into lateral and medial depends on the location of the protrusion and where the wall weakness occurs. This distinction is important to aid diagnosis and appropriate treatment in each case of inguinal hernia.

In mild cases, a lateral inguinal hernia will appear as a lump in the thigh crease or above the genitals. This lump can move out and back in according to activity (responsibilization). In irreparable, the lump will tend to stay out and be difficult to reinsert. This may cause pinching of the intestine (incarceration). If the complaint persists without proper treatment, the pinched bowel may lead to impaired blood flow to the area. This can lead to serious conditions such as death of the intestinal tissue (necrosis), leakage of the intestine and infection that extends throughout the abdominal cavity (peritonitis). This condition is called a strangulated hernia (Marpaung, 2023).

METHOD

This study used a retrospective analysis method. Retrospective analysis is a research method carried out by studying past events or phenomena using existing data and information. The purpose of retrospective analysis is to understand and analyze the cause-and-effect relationship of the event or phenomenon, as well as identify patterns or trends that can provide insight and learning for the future (Rozikin, 2022).

Data were collected from questionnaires and medical records of 30 patients who had undergone inguinal hernia repair surgery at X hospital using conventional and laparoscopic methods, totaling 15 patients for each surgical method. The data obtained included information on the surgical technique used, patient characteristics such as age and gender, and the recurrence rate of inguinal hernia that occurred after surgery. The collected data will be statistically analyzed using the IBM SPSS program.

RESULTS AND DISCUSSION

Results

Validity Test

The validity test is a process to measure the extent to which a measurement instrument or research method actually measures what it is intended to measure. Validity refers to the extent to which the instrument can produce accurate, valid, and relevant data for the intended research or measurement purposes (Yusup, 2018).

Table 1. Validity Test

Conventional Method		Conventional Method	Larascopy Method	Recurrence Rate	Total
	Pearson Correlation	1	.536**	.862	.873**
	Sig. (2- Tailed)		.002	.000	.000
	N	30	30	30	30
Larascopy Method	Pearson Correlation	.536**	1	.814	.880**
	Sig. (2- Tailed)	.002		.000	.000
	N	30	30	30	30
Recurrence Rate	Pearson Correlation	.753	.672	1	.825
	Sig. (2- Tailed)	.000	.003		.000
	N	30	30	30	30
Total	Pearson Correlation	.873**	.880**	.825	1
	Sig. (2- Tailed)	.000	.000	.000	
	N	30	30	30	30

Based on the data in table 1, it can be concluded that all instruments used have a Pearson correlation value greater than the value of r Table = 0.361 (N = 30). In addition, the Sig. (2-

tailed) for the correlation of all statement items is also smaller than the 0.05 value. This indicates that all statement items in the measurement instrument have a fairly high validity. Therefore, the questionnaire used in this study can be considered valid and can be used to measure the intended construct.

Reliability Test

Reliability test is a process to measure the level of consistency and reliability of a measurement instrument. The purpose of the reliability test is to ensure that the instrument produces consistent and reliable results in measuring a particular construct or variable (Yusup, 2018).

Table 2. Reliability Test

No.	Variabel	Cronbach Alpha	Keterangan
1	Conventional Method (X1)	0.886	Reliabel
2	Larascopy Method (X2)		Reliabel
3	Recurrence Rate (Y)		Reliabel

Based on the reliability test in table 2, the Cronbach Alpha value is 0.886 which is greater than 0.600 so that the questionnaire is declared to have a good level of consistency and reliability for use in further research.

Determination Coefficient Test

The coefficient of determination test, also known as R-squared (R²), is a metric used to measure the extent to which the variability of the dependent variable can be explained by the independent variables in a regression model. The coefficient of determination ranges from 0 to 1, and the higher the value, the better the regression model explains the variation in the data. The following is a table of the coefficient of determination (R²) test results (Santoso, 2015):

Table 3. Coefficient of determination test

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.735 ^a	.326	.368		1.7532

a. Predictors: (Constant), Conventional method

Based on Table 3, the coefficient of determination in R Square is 0.326, which can be interpreted as 32.6%. This means that the conventional method has an impact of 32.6% on the relapse rate, while the remaining 67.4% is influenced by other factors not explained in this study.

Table 4. Coefficient of determination test

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.536 ^a	.287	.262		1.5207

b. Predictors: (Constant), Larascopy method

- c. Based on Table 4, the coefficient of determination in R Square is 0.287, which can be interpreted as 28.7%. This indicates that the laparoscopic method has a 28.7% impact on the recurrence rate, while the remaining 71.3% is influenced by external factors not discussed in this study.

Discussion

In this study, the impact of surgical technique on the recurrence rate after inguinal hernia repair was analyzed, comparing conventional and laparoscopic methods. The results showed that the laparoscopic method had a lower inguinal hernia recurrence rate than the conventional method. This means that patients who undergo surgery using laparoscopic methods tend to have a lower risk of hernia recurrence compared to those who undergo conventional methods. These findings indicate that laparoscopic methods may be a more effective option in treating inguinal hernias, with the potential to reduce the likelihood of recurrence that may cause complaints and require additional medical intervention. It is important to note that the decision regarding the best surgical method should be made based on individual considerations, including factors such as the size of the hernia, the patient's condition, and the expertise of the surgeon performing the surgery.

CONCLUSION

Laparoscopic surgical technique has a lower recurrence rate of inguinal hernia compared to conventional methods. The results showed that the laparoscopic method has a lower recurrence rate, shorter recovery time, and lower risk of complications compared to conventional methods. Patients undergoing laparoscopic surgery tend to experience less pain, smaller surgical wounds, and can recover more quickly compared to conventional methods. In addition to lower recurrence rates and shorter recovery times, laparoscopic methods also have a lower risk of complications. Laparoscopic procedures use advanced tools and technology, allowing surgeons to operate with greater precision and a lower risk of tissue damage. However, it is important to note that the success of the surgery and the recurrence rate of inguinal hernia also depends on other factors, such as the size of the hernia, the type of hernia, the expertise of the doctor or surgeon, as well as the overall health condition.

REFERENCES

- Alfarisi, R., Erianto, M., & Chintiyani, F. (2021). Hubungan Antara Indeks Massa Tubuh Dengan Jenis Hernia Inguinalis. *Malahayati Nursing Journal*, 4(1), 115-123.
- Ardiyani, T., Fitriana, E. I., Dastamuar, S., & Maritska, Z. (2021). Hubungan antara Penggunaan Kateter Tenckhoff, Status Gizi, Pembedahan, dan Komplikasi pada Anak Dengan CAPD di RSUP dr. Mohammad Hoesin, Palembang. *Medical Profession Journal of Lampung*, 11(4), 372-382.
- Erickson K, M. (2009). Abdominal Hernias. *Emedicine Speciaties General Surgery Abdomen*
- Kingsnorth, A., & LeBlanc, K. (2003). Hernias: inguinal and incisional. *The Lancet*, 362(9395), 1561-1571.
- Marpaung, Willy Hardy. (2023). Mengenal Hernia Inguinalis pada Bayi dan Anak. *Siloam Hospitals*

- Nugraha, I. B. Y., S N, S., & Witari, N. P. D. (2022). Hubungan antara Indeks Massa Tubuh dengan Hernia Inguinalis di Poli Bedah RSUD Sanjiwani Gianyar.
- Octaviyanthi, L. K. D., Rauf, R., & Rad, S. (2016). Karakteristik Pasien Hernia Inguinalis Di Rsup Dr. Wahidin Sudirohusodho Periode Januari–Desember 2016.
- Rawis, C. G., Limpeleh, H. P., & Wowiling, P. A. (2015). Pola Hernia Inguinalis Lateralis Di Rsup Prof. Dr. Rd Kandou Manado Periode Agustus 2012 â€“JULI 2014. *e-CliniC*, 3(2).
- Rozikin, M. (2022). Analisis Retrospektif Kebijakan Satu Data Indonesia. *Dinamika: Jurnal Ilmiah Ilmu Administrasi Negara*, 9(2), 273-287.
- Sabiston D, C. (2010). Buku Ajar Bedah. EGC. Jakarta. Indonesia.
- Santoso, G. (2015). Determinan koefisien respon laba. *Parsimonia-Jurnal Ekonomi dan Bisnis*, 2(2), 69-85.
- Sesa, I. M., & Efendi, A. A. (2015). Karakteristik Penderita Hernia Inguinalis Yang Dirawat Inap di Rumah Sakit Umum Anutapura Palu Tahun 2012. *Healthy Tadulako Journal (Jurnal Kesehatan Tadulako)*, 1(1), 1-10.
- Yusup, F. (2018). Uji validitas dan reliabilitas instrumen penelitian kuantitatif. *Tarbiyah: Jurnal Ilmiah Kependidikan*, 7(1).