

ORIGINAL RESEARCH

Comparative Study of Laparoscopic and Open Techniques for Repairing Recurrent Bilateral Inguinal Hernias

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ABSTRACT

Inguinal hernia is characterized by the protrusion of abdominal contents through a weak spot in the lower abdominal wall. It is a prevalent condition encountered in surgical clinics. Standard treatments include laparoscopic repair and open repair with mesh. However, recurrence remains a significant issue, with rates as high as 33%. Factors such as the surgical approach and the size of the mesh used for the primary hernia repair influence the likelihood of recurrence. When an inguinal hernia recurs, repairing it becomes a challenging procedure with a high risk of further recurrence and complications. Therefore, improving the success rate of hernia repair and minimizing recurrence and complications is a substantial challenge in the management of inguinal hernia.

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INTRODUCTION

Hernia repair is a surgical procedure used to correct hernias, which occur when an organ or tissue pushes through a weak spot in the surrounding muscle or connective tissue.

A hernia occurs when an internal part of the body, usually the intestines or abdominal tissue, pushes through a weak spot in the muscle or tissue wall that surrounds it. This can create a visible bulge under the skin, often exacerbated by activities that increase intra-abdominal pressure like lifting heavy objects or straining. There are several types of hernias, including inguinal hernias (most common, occurring in the groin), umbilical hernias (around the belly button), femoral hernias (lower groin), and incisional hernias (at the site of a previous surgical incision).

Hernia Repair Surgery The primary treatment for hernias is surgical repair. Depending on the type and severity of the hernia, the procedure may involve either open surgery or laparoscopic (minimally invasive) techniques. During the surgery, the protruding tissue is pushed back into place, and the weakened abdominal wall is reinforced with stitches or a synthetic mesh to prevent recurrence.

Recovery time varies depending on the type of surgery and individual factors. In general, patients can expect to return to normal activities gradually over several weeks. Pain management and avoiding

strenuous activities are typically recommended during the initial recovery period. Hernia repair surgery aims to alleviate discomfort, prevent complications such as bowel obstruction, and reduce the risk of strangulation (where blood flow to the herniated tissue is cut off). Like any surgery, it carries risks such as infection, recurrence, and adverse reactions to anesthesia. Treatment decisions are based on the size and location of the hernia, patient's overall health, and preferences. It's essential for individuals with hernias to consult with a healthcare provider to determine the most suitable treatment approach.

Hernia repair surgery is a common and effective procedure that helps restore normal anatomy and function while reducing the risk of complications associated with hernias.

AIMS AND OBJECTIVES

The aim of our prospective randomized trial was to compare the outcomes of two methods for treating recurrent inguinal hernia: the tension-free Lichtenstein technique and one of the two most commonly used laparoscopic methods, transabdominal preperitoneal (TAPP) repair.

MATERIALS AND METHODS

A study conducted between January 2020 and June 2022 at CRGH, UJJAIN included 52 patients aged 20

to 70 years who underwent either open or laparoscopic hernia repair. Patients with bilateral recurrent inguinal hernias requiring surgical intervention and who consented to participate were included. Exclusion criteria encompassed unilateral hernias, scrotal hernias, emergency operations for incarcerated hernias, concurrent procedures, patient

preference for a specific surgical technique, or refusal to participate. Patients were categorized into two groups: Group A underwent the Lichtenstein procedure, while Group B underwent laparoscopic TAPP surgery. Open procedures utilized epidural, spinal, or general anaesthesia, while laparoscopic procedures were conducted under general anaesthesia.

RESULTS

Table 1: Age Wise Distribution

Age Wise Distribution		
Age (Years)	Lichtenstein	Laparoscopic Repair (TAPP)
21 - 30	1	1
31 - 40	5	2
41 - 50	14	14
51 - 60	6	6
61 - 70	2	1
Total	28	24

As shown in Table 1 - 28 patients were included in the Lichtenstein group A with a mean age of 44.2 ± 5.8 (range 20–70years), and 24 patients were included in the TAPP repair group B with a mean age of 45 ± 5 (range 20–70 years).

Table 2: Gender Wise Distribution

Gender Wise Distribution		
	Lichtenstein	Laparoscopic Repair (TAPP)
Male	26	22
Female	02	02

The male to female ratio was 26: 2 and 22: 2 in Lichtenstein and TAPP groups, respectively.

Table 3: Post Operative Complications

Post Operative Complications		
	Lichtenstein	Laparoscopic Repair (TAPP)
Primary Complications		
Infection	01	00
Hematoma	01	01
Seroma	02	03
Urinary Retention	00	04
Recurrence	00	0
Chronic Pain		
6 Months	05	02
12 Months	07	01

The postoperative complications like chronic groin pain were observed in 12 patients (42.85%) in Lichtenstein repair group A, which was more as compared to 3 patients (22%) in TAPP repair group B. Seroma formation was seen in 2 patient (7.14%) in Lichtenstein repair group A and 3 patients (10.71%) in Laparoscopic TAPP repair group B and urinary retention was found in 4 patients (18%) was more in Laparoscopic TAPP. There was no significant difference in the recurrence rate in both groups.

DISCUSSION

The TAPP (trans-abdominal pre-peritoneal) approach involves accessing the inguino-femoral region through the abdominal cavity and placing the mesh outside the peritoneum. It is not recommended for large scrotal hernias, after radical prostatectomy, or in children. However, it is favoured in young adults due to its low recurrence rate.

Lichtenstein repair is a tension-free mesh technique where the hernia sac is separated from the cord structures, returned into the abdomen, and the defect in the abdominal wall is closed with sutures before placing the mesh. It is contraindicated for strangulated hernias and perforated bowel cases.

Postoperative complications of hernia repair include seroma (most common in endoscopic repair), hematoma (less frequent in endoscopic procedures), chronic pain (more prevalent after open repair), and specific risks like ischemic orchitis or testicular atrophy. Other less common complications include wound infections, urinary retention, bladder damage, mesh migration, bowel obstruction, and rarely, ischemic orchitis or testicular atrophy.

Treating recurrent inguinal hernias is challenging due to complex factors such as scar tissue, weakened connective tissue, and varied anatomical presentations. Mesh-based techniques are generally preferred, but debates continue regarding their specific indications.

CONCLUSION

The laparoscopic approach to hernia repair offers several advantages over open surgery, including a lower incidence of incision infections and shorter hospital stays. However, it typically requires a longer operative time. The use of mesh in laparoscopic repairs significantly reduces the risk of hernia recurrence by 30-50%, although overall recurrence rates between laparoscopic and open mesh methods do not show significant differences.

Patients undergoing laparoscopic repair often experience less persistent pain and numbness and can return to normal activities sooner compared to open surgery. However, laparoscopic procedures carry a higher risk of serious complications, particularly visceral (such as bladder) and vascular injuries.

Based on current findings, laparoscopic repair is preferred for treating recurrent inguinal hernias that occurred after conventional non-mesh methods, especially in young, physically active, non-obese patients. This preference is due to reduced postoperative pain and faster recovery times. In cases where laparoscopy is contraindicated, Lichtenstein surgical intervention remains a highly recommended alternative.

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