Journal Homepage: -www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/18131
DOI URL: http://dx.doi.org/10.21474/IJAR01/18131

RESEARCH ARTICLE

COMPARATIVE STUDY: LICHTENSTEIN'S TENSION-FREE MESH REPAIR VS. STOPPA'S REPAIR FOR BILATERAL INGUINAL HERNIAS

Koli Nikhil Vanura[1] and Arun Kumar T.[2]

1. MS (General Surgery), Assistant Professor, Department of General Surgery, ESIC Medical College and Hospital, Kalaburagi, Karnataka.
2. MS (General Surgery), Professor, Department of General Surgery, ESIC Medical College and Hospital, Kalaburagi, Karnataka.

Manuscript Info

Manuscript History
Received: 06 November 2023
Final Accepted: 10 December 2023
Published: January 2024

Key words:-
GPRVS Stoppa's Repair, Lichtenstein Tension-Free Mesh Repair, VAS

Abstract

Our study investigates the viability of Giant prosthetic reinforcement of the visceral sac (GPRVS) Stoppa's repair as an alternative to Lichtenstein Tension-Free Mesh Repair for Bilateral Inguinal Hernias. With a focus on patient satisfaction and outcomes, the research aims to compare the two techniques based on postoperative complications, chronic groin pain, and postoperative pain assessed by the Visual Analogue Scale(VAS). In a sample of 70 cases, randomized into two groups, the study employs a single-incision bilateral approach. Results indicate that Stoppa's repair offers comparable effectiveness to Lichtenstein, demonstrating a reduction in postoperative complications, chronic groin pain, and postoperative pain. The study concludes that GPRVS Stoppa's repair is a promising alternative, emphasizing enhanced patient satisfaction and similar procedural success concerning Early Recurrence and Duration of Hospital Stay.

Introduction:-

The lifetime risk of developing groin hernias through the Inguinal or Femoral Canals is estimated at 27-43% in men and 3-6% in women, with a general population occurrence ranging from 1-6%. Bilateral hernias, though less common (6-8%), contribute significantly to the over 20 million hernia surgeries conducted globally each year.

For many years, simultaneous repair of bilateral inguinal hernias faced skepticism due to high recurrence rates. However, advancements in tension-free techniques, particularly mesh repair, have made simultaneous repairs feasible, with Lichtenstein's Tension-Free Mesh Repair emerging as the gold standard in open techniques, alongside Stoppa's Repair. Laparoscopic approaches like TEP and TAPP also offer comparable outcomes.

Aims and Objectives:-

This study aims to compare Lichtenstein's tension-free mesh repair with Stoppa's repair for treating bilateral inguinal hernias across several parameters, including:

1. Postoperative complications (wound infection, seroma formation, immediate and chronic groin pain, mesh rejection).
2. Duration of hospital stay.

Corresponding Author:- Koli Nikhil Vanura
Address:- MS (General Surgery), Assistant Professor, Department of General Surgery, ESIC Medical College and Hospital, Kalaburagi, Karnataka.

3. Time taken to return to normal activity.
4. Early recurrence.

Materials and Methods:-

Source of Data:
ESIC Medical College, Kalaburagi.

Study Design:
Prospective & Comparative Study

Study Period:
November 2021 to November 2022

Sample Size:
N=70

Inclusion Criteria:
Patients willing to participate with informed written consent.
Age > 18 years.

Exclusion Criteria:
1. Obstructed or Strangulated Hernias.
2. Primary Unilateral Hernias.
3. Congenital Inguinal Hernia.

Methodology:-

A total of 70 cases were selected using a convenience sampling method.Patients were randomized into two groups (Group-A: Lichtenstein Tension-Free Mesh Repair, Group-B: Stoppa's Repair) using computer-generated randomization.

Lichtenstein's Tension-Free Mesh Repair:

1. Skin incision above the pubic tubercle along the groin crease.
2. External oblique aponeurosis incised.
3. Cord structures mobilized.
4. Indirect sac dissected, ligated, and divided; direct sac inverted.
5. Mesh placement and fixation.
6. Hemostasis achieved; wound closed in layers.

Stoppa's Repair:

1. Midline infra umbilical incision.
2. Blunt dissection into the preperitoneal space.
3. Dissection of the space of Retzius inferiorly till prostate and space of Bogros laterally.
4. Reduction of hernia sacs.
5. Dissection of spermatic cord and gonadal vessels.
6. Placement of polypropylene mesh without fixation.
7. Abdominal closure with a suction drain.

While replicating the original procedure, we made key modifications: using polypropylene mesh instead of dacron and fixing the mesh with sutures to the pubic symphysis.

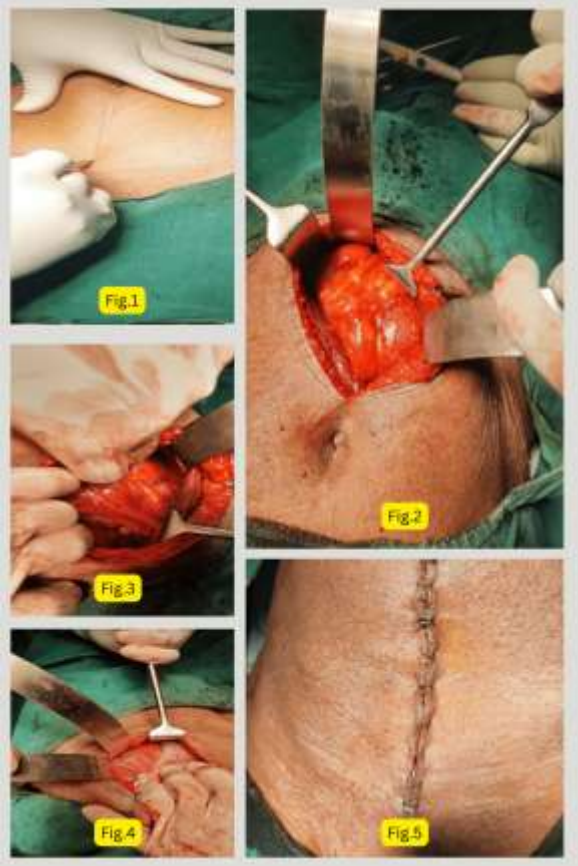

Fig.1 to Fig.5:- Steps of Stoppa's repair.

Post-procedure, patients were assessed for immediate complications, and follow-ups were conducted at regular intervals.

Postoperative Care and Complications:

1. After surgery, a vigilant postoperative care regimen was implemented, focusing on pain, bleeding, urinary retention, and wound infection. Pain assessment utilized the Wong-Baker Facial Grimace Scale, starting 12 hours post-surgery, after the subsiding effects of spinal or general anesthesia.
2. Wound infection criteria included pus discharge, abnormal tenderness at the operative site, and constitutional symptoms such as fever. Additionally, seroma in the inguinal region was closely monitored.

Statistical Analysis:

Data was analyzed using descriptive and inferential statistics. Chi-square test for categorical data, unpaired student's t-test for continuous data. p-value < 0.05 is considered statistically significant. Statistical package SPSS-20 was used for analysis.

Results:-

1. Distribution of age between study groups

AGE(YRS)	GROUP-B		GROUP-A		p value
	N	%	N	%	
31-40	4	11.4%	6	17.1%	0.017*
41-50	8	22.9%	18	51.4%	
51-60	18	51.4%	6	17.1%	
61-70	5	14.3%	5	14.3%	
Total	35	100.0%	35	100.0%	

2. Distribution of sex between study groups

SEX	GROUP-B		GROUP-B		p value
	N	%	N	%	
MALE	35	100.0%	35	100.0%	-
FEMALE	0	0.0%	0	0.0%	
Total	35	100.0%	35	100.0%	

3. Wound infection between study groups

WOUND INFECTION	GROUP B		GROUP A		p-value
	N	%	N	%	
YES	3	8.6	3	8.6	1
NO	32	91.4	32	91.4	
Total	35	100	35	100.0	

4. Distribution of seroma between study groups.

SEROMA	GROUP-B		GROUP A		p value
	N	%	N	%	
YES	2	5.7	4	11.4	0.393
NO	33	94.3	31	88.6	
Total	35	100	35	100	

5. Immediate post opeartive pain between study groups (analyzed on post operative day 1) by VAS.

IMMEDIATE POST OPEARTIVE PAIN	GROUP-B		GROUP-A		p value
	N	%	N	%	
1-2	0	0.0	0	0.0	0.382
3-4	0	0.0	0	0.0	
5-6	29	82.9	26	74.3	
7-8	6	17.1	9	25.7	
9-10	0	0.0%	0	0.0%	
Total	35	100.0%	35	100.0%	

6. Chronic groin pain between study groups.

CHRONIC GROIN PAIN	GROUP-B		GROUP-A		p value
	N	%	N	%	
YES	1	2.9	5	14.3	0.088
NO	34	97.1	30	85.7	
Total	35	100.0	35	100.0	

7. Mesh rejection between study groups.

MESH REJECTION	GROUP-B		GROUP-A		p value
	N	%	N	%	
YES	0	0.0	0	0.0	-
NO	35	100	35	100	
Total	35	100	35	100	

8. Early recurrence between study groups.

EARLY RECURRENCE	GROUP B		GROUP A		p value
	N	%	N	%	
YES	1	2.9	1	2.9	1
NO	34	97.1	34	97.1	
Total	35	100	35	100	

9. Duration of hospital stay between study groups.

Parameters	GROUP B		GROUP A		p value
	Mean	SD	Mean	SD	
Duration of hospital stay	5.16	0.5	5.21	0.5	0.636

10. Days taken to return to normal activity between study groups.

Parameters	GROUP B		GROUP A		p value
	Mean	SD	Mean	SD	
Days taken to return to normal activity	13.4	1.6	10.9	1.9	<0.001*

Discussion:-

Our study revealed no significant disparities in wound infection, seroma formation, or immediate post-operative pain between the groups. These findings align with the observations of previous studies conducted by Youssef et al, Z Abbas et al, and Gavit et al. Despite these consistencies, it is essential to note the presence of five cases of chronic groin pain in Group-B, compared to only one in Group A; however, this difference was deemed statistically insignificant. Additionally, no discernible contrast in recurrence rates was observed between the two procedures. While there was no significant difference in the duration of hospital stay, an interesting observation emerged — patients undergoing Stoppa's repair took more time to return to normal activity compared to those undergoing Lichtenstein's repair. This divergence in postoperative recovery warrants further exploration and consideration in the context of selecting the optimal hernia repair technique.

Conclusion:-

Our study yields the following conclusions:

GPRVS Stoppa's repair emerges as a viable substitute for Lichtenstein Tension-Free Mesh Repair in Bilateral Inguinal Hernias. The single-incision bilateral approach enhances patient satisfaction, marked by:

1. Reduced postoperative complications, including seroma.
2. Lower occurrence of chronic groin pain.
3. Diminished postoperative pain, assessed via VAS.
4. Comparable outcomes with standard procedures concerning Early Recurrence and duration of hospital stay.

References:-

1. Gilbert AI. An anatomic and functional classification for the diagnosis and treatment of inguinal hernia. Am J Surg 1989;157(3):331-3.
2. Read RC, Barone GW, Hauei-Jensen M. Preperitoneal prosthetic placement through the groin. SurgClin North Am 1993;73:545-55.
3. Bendavid R. The Space of Bogros and the deep inguinal venous circulation. Surg GynaecObstet 1992:174(5):355-8.
4. Dr Pragnesh Gavit et al JMSCR Volume 05 Issue 01 January 2017
5. Latheef AA et al J. Evolution Med. Dent. Sci./eISSN- 2278-4802, pISSN- 2278-4748/ Vol. 6/ Issue 26/ Mar. 30, 2017
6. Ahmed Talha et al The Egyptian Journal of Surgery 2015, 34:79–84.