

## Original Research

### Comparison of fixation versus non-fixation of mesh in totally extraperitoneal repair of inguinal hernia

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#### ABSTRACT:

**Background:** Inguinal hernias occur when a portion of the intestines or abdominal tissue protrudes through a weak point or tear in the abdominal wall in the groin area. The present study was conducted to compare fixation versus non-fixation of mesh in totally extraperitoneal repair of inguinal hernia. **Materials & Methods:** 78 patients of inguinal hernia of both genders were divided into 2 groups of 39 each. Group I was fixation and group II was non-fixation group II. Parameters such as operative times, ASA grade, type of hernia, side and complications was recorded. **Results:** Group I was fixation and group II was non-fixation group II. Group I had 29 males and 10 females and group II had 26 males and 13 females. The mean operative time was 41.3 minutes in group I and 37.4 minutes in group II. ASA grade I was seen in 30 in group I and 31 in group II and grade II in 9 in group I and 8 in group II. Type of hernia was primary in 32 in group I and 29 in group II and recurrent in 7 in group I and 10 in group II. Side was left seen in 20 and 18 in group I and II and right in 19 and 21 in group I and II respectively. Complications were injury to viscera in 2 and 4, injury to inferior epigastric vessels in 5 and 2 and injury to major vessels in 1 and 3 in group I and II respectively. The difference was significant ( $P < 0.05$ ). **Conclusion:** Avoidance of fixation of mesh during totally extra peritoneal repair of inguinal hernias is as safe as mesh fixation.

**Key words:** extra peritoneal, inguinal hernias, abdominal tissue

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#### INTRODUCTION

Laparoscopic inguinal hernia surgery, also known as minimally invasive or laparoscopic hernia repair, is a surgical procedure used to repair inguinal hernias. Inguinal hernias occur when a portion of the intestines or abdominal tissue protrudes through a weak point or tear in the abdominal wall in the groin area (inguinal canal). Laparoscopic surgery offers several advantages over traditional open hernia repair, including smaller incisions and faster recovery times.<sup>1</sup> Inguinal hernia repair is a commonly performed general surgery procedure in both adults and children with inguinal hernias constituting more than 95% of all groin hernia repairs.<sup>2</sup> The well-known risk factors and causes of inguinal hernias have been reported as increased abdominal pressure, pre-existing weakness of abdominal muscles, straining during defecation, heavy lifting of weights, obesity, pregnancy etc.<sup>3</sup> Laparoscopic tackers are typically utilized for mesh fixation, and many tacks were being employed.

The number of tacks has since been reduced to two, one laterally at the level of the anterior superior iliac spine and one medially over the Coopers ligament, to lessen CGP.<sup>4</sup> Additionally, there have been initiatives to prevent mesh attachment. Avoiding mesh fixation raises concerns since, although attempting to lower CGP, it may also increase the likelihood of IH recurrence because non-fixation may cause mesh to shift.<sup>5</sup> The present study was conducted to compare fixation versus non-fixation of mesh in totally extraperitoneal repair of inguinal hernia.

#### MATERIALS & METHODS

The present study consisted of 78 patients of inguinal hernia of both genders. All gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 39 each. Group I was fixation and group II was non-fixation group II. Parameters such as operative times, ASA grade, type

of hernia, side and complications was recorded. Data thus obtained were subjected to statistical analysis. P

value < 0.05 was considered significant.

**RESULTS**

**Table I Distribution of patients**

Groups	Group I	Group II
Method	Fixation	Non- fixation
M:F	29:10	26:13
Operative time (minutes)	41.3	37.4

Table I shows that group I was fixation and group II was non-fixation group II. Group I had 29 males and 10 females and group II had 26 males and 13 females. The mean operative time was 41.3 minutes in group I and 37.4 minutes in group II.

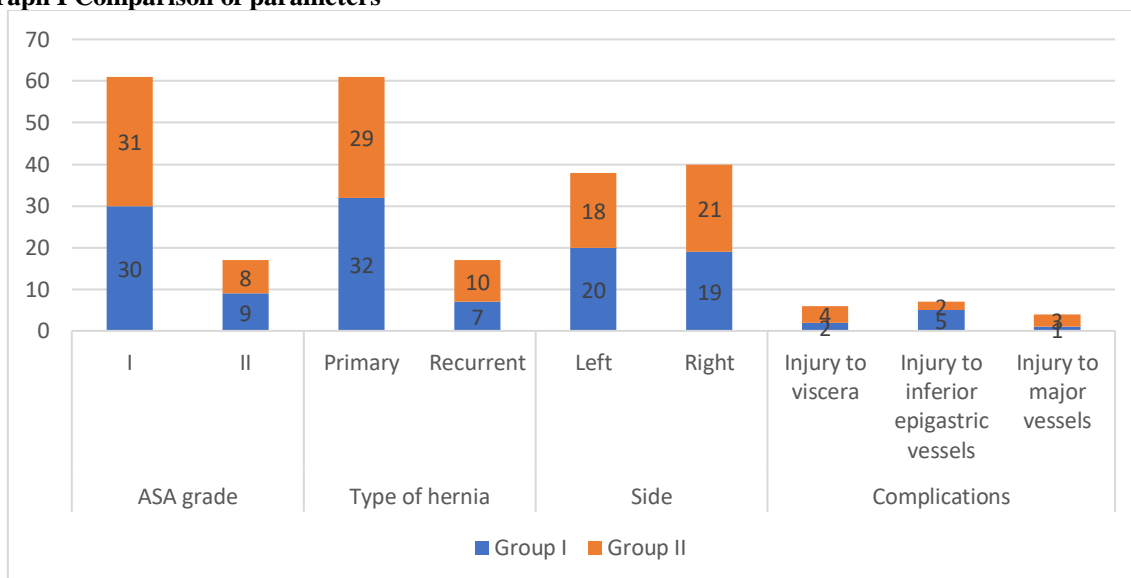
**Table II Comparison of parameters**

Parameters	Variables	Group I	Group II	P value
ASA grade	I	30	31	0.04
	II	9	8	
Type of hernia	Primary	32	29	0.05
	Recurrent	7	10	
Side	Left	20	18	0.95
	Right	19	21	
Complications	Injury to viscera	2	4	0.05
	Injury to inferior epigastric vessels	5	2	
	Injury to major vessels	1	3	

Table II, graph I shows that ASA grade I was seen in 30 in group I and 31 in group II and grade II in 9 in group I and 8 in group II> Type of hernia was primary in 32 in group I and 29 in group II and recurrent in 7 in group I and 10 in group II. Side was left seen in 20 and 18 in group I and II and right in 19 and 21 in

group I and II respectively. Complications were injury to viscera in 2 and 4, injury to inferior epigastric vessels in 5 and 2 and injury to major vessels in 1 and 3 in group I and II respectively. The difference was significant (P< 0.05).

**Graph I Comparison of parameters**



**DISCUSSION**

A hernia occurs when an organ of the body pushes itself through an opening in the muscle or tissue that is supposed to hold it in place.<sup>6</sup> This type of hernia is most common in the abdominal region. This opening or the orifice is a defect in the innermost layer of the abdomen and the hernia is outpouch of the peritoneum.<sup>7,8</sup> Abdominal wall hernias only occur in

certain areas namely, where aponeurosis and fascia are devoid of the protecting support of striated muscle. These may be acquired through muscular atrophy, surgery or trauma.<sup>9,10</sup> The present study was conducted to compare fixation versus non-fixation of mesh in totally extraperitoneal repair of inguinal hernia.

We found that group I was fixation and group II was non-fixation group II. Group I had 29 males and 10 females and group II had 26 males and 13 females. The mean operative time was 41.3 minutes in group I and 37.4 minutes in group II. Balamaddaiah G et al<sup>11</sup> identified the various types of inguinal hernia observed and their risk factors. Out of the 212 patients, 79.2% patients were males and 20.8% were females and the commonest age group was 31-60 years. 74.5% of the cases were primary inguinal hernia while 25.5% were recurrent hernia. Period of swelling was less than one year for majority of the patients, while the least of them had swelling for more than 2 years. The most common cause for the presence of hernia was lifting heavy objects in 52.4% and improper bowel movements (46.7%).

We found that ASA grade I was seen in 30 in group I and 31 in group II and grade II in 9 in group I and 8 in group II. Type of hernia was primary in 32 in group I and 29 in group II and recurrent in 7 in group I and 10 in group II. Side was left seen in 20 and 18 in group I and II and right in 19 and 21 in group I and II respectively. Complications were injury to viscera in 2 and 4, injury to inferior epigastric vessels in 5 and 2 and injury to major vessels in 1 and 3 in group I and II respectively. Kumar et al<sup>12</sup> assessed the recurrence rates and CGP and the secondary objective was to assess operative times, immediate post-op pain, incidence of urinary retention, duration of hospital stay, days taken to return to activity, and cost. The mean operative times for unilateral IH for the fixation and non-fixation groups were  $41.8 \pm 11.4$  and  $35.9 \pm 9.7$  min, respectively, whereas for bilateral were  $66.2 \pm 15.6$  and  $55.3 \pm 14.2$  minutes, respectively. The mean pain score was  $3.44 \pm 1.2$  versus  $3.01 \pm 1.0$ ; ( $p = 0.037$ ) in the two groups, respectively. At a mean follow-up of  $33.2 \pm 17.0$  and  $18.7 \pm 6.2$  months, the incidence of CGP was 02 (3.4%) and 3 (2.7%) and recurrences were 02 (3.4%) in the two groups, respectively ( $p = 0.118$ ). Non-fixation of mesh in TEP does not lead to increased recurrence though it does not decrease the incidence of chronic groin pain.

The limitation of the study is the small sample size.

## CONCLUSION

Authors found that avoidance of fixation of mesh during totally extra peritoneal repair of inguinal hernias is as safe as mesh fixation.

## REFERENCES

- Burcharth J, Pedersen M, Bisgaard T, Pedersen C, Rosenberg J. Nationwide prevalence of groin hernia repair. *PLOS one*. 2013;8(1):54367.
- Gulzar, MR, Iqbal J, Ulhaq MI, Afzal M. Darning vs bassini repair for inguinal hernia: a prospective comparative study. *Professional Med J*. 2007;14:128-33.
- Ruhl CE, Everhart JE. Risk factors for inguinal hernia among adults in the US population. *Am J Epidemiol*. 2007;165:1154-61.
- Nordback I. Side incidence of inguinal hernias. *Ann ChirGynaecol*. 1984;73:87-90.
- Sangwan M, Sangwan V, Garg M, Mahendirutta P, Garg U. Abdominal wall hernia in a rural population in India: is spectrum changing? *Open J Epidemiology*. 2013;3:135-8.
- Devlin HB. Trends in hernia surgery in the land of Astley Cooper. In: Soper NJ, ed. *Problems in general surgery Vol 12*. Philadelphia, PA: Lippincott-Raven, 1995:85-92.
- Garba ES. The pattern of adult external abdominal hernias in Zaria. *Nigerian J Sur Res*. 2000;2:12-5.
- Singh AN, Bansal VK, Misra MC, Kumar S, Rajeshwari S, Kumar A et al. Testicular functions, chronic groin pain and quality of life after laparoscopic and open mesh repair of inguinal hernia: a prospective randomized controlled trial. *SurgEndosc* 2012;6(5):1304–1317.
- Jakhmola CK, Kumar A. Laparoscopic inguinal hernia repair in the armed forces: a 5 year single centre study. *MJAFI* 2015;71(4):317–323.
- Amid PK, Shulman AG, Lichtenstein IL. Open Btensionfree^ repair of inguinal hernias: the Lichtenstein technique. *Eur J Surg* 1996;162(6):447–453.
- Balamaddaiah G, Reddy SVRM. Prevalence and risk factors of inguinal hernia: A study in a semi-urban area in Rayalaseema, Andhra Pradesh, India. *Int Surg J* 2016;3:1310-3.
- Kumar A, Kaistha S, Gangavatiker R. Non-fixation versus fixation of mesh in totally extraperitoneal repair of inguinal hernia: a comparative study. *Indian Journal of Surgery*. 2018 Apr;80:128-33.