

Original Research Article

Trans-Inguinal Preperitoneal Meshplasty(Tipp) In Inguinal Hernia RepairDr. Sagar Ghodasara¹, Dr Dhruv Patel², Dr. Mayank Vekariya³, Dr. Hitesh Meghani⁴¹Senior Resident at P.D.U. Medical College, Rajkot²Resident in Neurosurgery at Dhiraj General Hospital, Waghodia.³Assistant Professor at P.D.U Medical College, Rajkot⁴Assistant Professor at P.D.U Medical College, Rajkot***Corresponding author**

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Abstract: In modern era, laparoscopic hernia repair gained popularity and good operative result at the cost of difficult learning curve. But in our setup most of the patients come from a middle to lower socioeconomic background where open pre-peritoneal meshplasty is better option in terms of duration of surgery, hospital stay, per and postoperative complications, cost effectiveness. Preperitoneal technique provides patients more or less same benefits as of the laparoscopic surgery. Preperitoneal meshplasty is the best method for strengthening of the posterior wall in case of inguinal hernia. It can be done by conventional open surgery by inguinal incision. It can be performed in high risk patient in both regional and local anesthesia contrary to laparoscopy requiring GA.

Keywords: Preperitoneal meshplasty for inguinal hernia repair, Lap.TEP, duration of surgery. Per-operative and post-operative complications, Hospital stay.

INTRODUCTION:

Mesh repair of inguinal hernia is the most common operation performed on general surgical patients. Approximately 20 million groin hernioplasties are performed each year worldwide[1]. Countless studies have been reported in the medical literature in attempts to improve the overall outcomes following hernia operations and, due to this fact, the procedure has evolved immensely, especially over the last few decades. Recurrence of inguinal hernia was initially a significant problem. Lichtenstein repair (LR), recurrence rate has consistently been reported as low as 1–4%[2], a drop from up to 10%. But increased incidence of chronic groin pain following LR. Transinguinal preperitoneal (TIPP) inguinal hernia repair with soft mesh has been reported as a safe anterior approach with a preperitoneal mesh position[3] Theoretically, TIPP repair may be associated with lesser chronic postoperative pain than Lichtenstein's technique due to the placement of mesh in the preperitoneal space to avoid direct regional nerves dissection and their exposure to bio-reactive synthetic mesh. The placement of mesh in this plane without using any suture for fixation and lack of mesh exposure to regional nerves was assumed to result in the reduced risk of developing chronic groin pain. So aim of our

study to prove less hospital stay and complication and cost effectiveness for preperitoneal meshplasty.

MATERIALS AND METHODS:

Total 35 cases selected randomly and observed in which TIPP done. Patients gets admitted in Surgery department with diagnosis of direct or indirect inguinal hernia and undergone TIPP from date 1/3/2014 to 31/10/2015.

Study design

The present study was randomized, observational. Protocol of trial procedure was formed along with performa, Patient Information Sheet and Informed Consent which is needed as in all cases as preoperative written consent.

Patient selection

Inclusion criteria: All patients with clinically diagnosed inguinal hernia with or without comorbid condition like DM, HTN, respiratory and bladder complains.

Exclusion criteria: children and previously major laparotomy cases.

ANALYSIS AND RESULT:

Table.1 age wise distribution and diagnosis of hernia

AGE	HERNIA TYPE	
	DIRECT	INDIRECT
21-30	0(0%)	3(15%)
31-40	0(0%)	3(15%)
41-50	2(13.33%)	7(35%)
51-60	6(40%)	2(10%)
>60	7(46.66%)	5(25%)
Total	15	20

In our study total 15 patients were having direct inguinal hernia of which maximum (7) patients were of age group >60, while there were no patients in <40 age group. Similarly, 20 out of 35 patients were having indirect inguinal hernia of which maximum (7) were of

41-50 age group while minimum (2) were of 51-60 age group. It can be suggested that as the age increases the incidence of direct hernia increases than indirect type. While indirect type is common in younger age groups.

Table 2: Duration of surgery & type of hernia

Duration of Surgery	No. of Patients Direct Hernia	No. of Patients Indirect Hernia
1.5 – 2 hour	08 (22.86%)	05(14.29%)
2 – 2.5 hour	06(17.14%)	11(28.21%)
>2.5 hour	01(2.86%)	04(11.43%)
Total	15(42.86%)	20(57.14%)

In our study of 17 surgical procedures were of duration of about 2-2.5 hours, while 5 of the total took >2.5 hours maximum duration of surgery was 3 hours while minimum operative duration was 1hr 45 mins. On

an average it can be inferred that indirect hernia repair takes more operative time as compared to direct hernia surgery.

Table 3: Duration of Surgery & complication (infection) rate

Duration of Surgery	No. of Patients With infection	Percentage
1.5 – 2 hour	00	(00%)
2 – 2.5 hour	02	(5.71%)
>2.5 hour	03	(8.58%)
Total	05	(14.29%)

In our study of 35 patients 5 patients suffered from post op infection of which maximum 3 were of >2.5 hours duration of surgery. While 2 were of 2-2.5

hours duration of surgery. And 3 of them were spanning >2.5 hours. It can be inferred that chances of infection are more as the duration of surgery increases.

Table 4: Age wise occurrence of complication (scrotal edema) among direct and indirect hernia patients.

AGE GROUP	DIRECT HERNIA	SCROTAL OEDEMA	INDIRECT HERNIA	SCROTAL OEDEMA
21-30	00	00	03	00
31-40	00	00	03	00
41-50	02	00	07	01
51-60	06	01	02	00
>60	07	00	05	01

In our study total of 3 patients out of 35 suffered from scrotal edema in post op period of which 2 were of indirect inguinal type while single patient of direct type had post op scrotal edema. This shows that scrotal

edema is common in indirect hernia due to soft tissue dissections (spermatic cord) involved in the procedure. There is no obvious inference on age and incidence of scrotal edema in post op period.

Table 5: Hospital stay of patient under study and infections

Days of Hospital Stay*	No. of patients	Infection
1-3	6	0
4-7	19	1
8-11	5	2
>11	3	2

(*) hospital stay counted from the date of operation till the date of discharge, while most of the patients were fit for discharge after POD4 and were discharged. Rest of them went at home and came for follow-up SR at a later date for unknown personal reasons. Total post-op stay in our study was days on average.

DISCUSSION:

Many different studies conducted at different levels that provides sufficient data for the preperitoneal meshplasty technique and its outcome. Recently reported meta-analysis of 12 studies confirmed the potential benefits of TIPP in terms of reduced risk of developing chronic groin pain with equivocal postoperative complications and risk of hernia recurrence. This study also provide that TIPP has less complication and less hospital stay[4]. Three eligible trials involving 569 patients were identified. Due to methodological limitations in the included studies, there was considerable variation in the results of acute and chronic pain across the control groups. Therefore, meta-analysis was not performed but the results of the outcomes in the individual trials were compared. Two trials involving 322 patients reported less chronic pain

after preperitoneal repair, whereas one trial, including 247 patients, described more chronic pain after this repair. The same trials favoured the preperitoneal technique concerning acute pain, whereas in the third trial it was almost omnipresent and thus comparable in both intervention arms. Early and late hernia recurrence rates were similar across the studies, whereas contrasting results were reported for other early outcomes as infection and hematoma[5]. The complication rate was higher in the laparoscopic group (18.84% vs. 7% [p=0.0055]), with the TEP group suffering a greater number of urinary tract complications (TEP 7.25% vs Open 0.36% p=0.0008); however patients in both groups had similar chronic pain occurrences (1.85% Open vs. 1.45% TEP [p=0.7745]). Both groups had similar recurrence rates (TEP 6.25% vs. Open 4.78% [p=0.7080])[6].

	Open	Lap. TEP	P
Patients	271	69	-
mean age	54.5	54.9	0.82
male%	91.1	92.7	0.85
complication rate%	7	18.84	0.0055
urinary tract infection	0.36	7.25	0.0008
chronic pain	1.85	1.45	0.7745
recurrence rate	4.78	6.25	0.7080
mean follow up(days)	148	98	0.2175

CONCLUSION:

From this study which was conducted in our setup most of the patients come from a middle to lower socioeconomic background where open pre-peritoneal is better option requiring shorter learning curve and also provides results equivalent to laparoscopic surgery with better cost effectiveness and shorter duration of hospital stay. Pre-peritoneal meshplasty can be performed in high risk patient in both regional and local anesthesia contrary to Lap. Procedure requiring GA. TEP(Lap total extra peritoneal) and open preperitoneal repairs are similar in terms of recurrence rate and incidence of chronic pain for primary inguinal hernias. Although TEP repair may facilitate a faster postoperative recovery, it has a steeper learning curve, higher complication rate and its access may be limited by its cost and equipment. Thus, open preperitoneal repair should be considered for primary herniorrhaphy with low chronic pain rates, low recurrence rates and a more easily mastered and accessible technique than TEP.

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