

## COMPARATIVE STUDY OF OPEN HERNIA REPAIR WITH LICHTENSTEIN PROCEDURE V/S SELF GRIPPING SEMI REABSORBABLE MESH

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### Abstract:

**Introduction:** Indeed, even extreme inguinal hernia fix is among the commonest activities in everyday medical procedure, the decision for an ideal methodology repeat rates and low commonness of entanglements, strain free lattice increased activity has become the standard strategy in inguinal hernia medical procedure, altogether diminishing hernia repeat rates.

**Materia & Methods:** Study conducted on 110 patients admitted in MGM Medical & M.Y. Hospital Indore. Total 110 consecutive patients who will undergo inguinal hernia repair at the Surgical Department & who fulfills the inclusion criteria were included. Clinical details, rate of post-op wound infection and post-op pain were noted. **Observation & Results:-** Total 110 patients enrolled in study most patients belonging to 51-65 years of age. Total 76 patients managed by suture fixation and 34 patients managed by Progrid mesh. Most patients found to have moderate pain. Wound infection rate came out to be 13%. **Conclusion:** The point of our investigation is to think about the result after Lichtenstein's inguinal hernia fix utilizing ordinary lattice v/s self-focusing Pro grasp network. The essential endpoint of the examination will be the occurrence of post-operative pain. Open Inguinal hernioplasty utilizing Self Gripping Mesh (Pro hold) has better result as far as usable time, Post-usable torment, Hospital stay, Early re-visitation of expert life and ongoing agony.

**Keywords:** Inguinal Hernia, Prolene mesh, Progrid etc.

### Introduction:

Indeed, even extreme inguinal hernia fix is among the commonest activities in everyday medical procedure, the decision for an ideal methodology repeat rates and low commonness of entanglements, strain free lattice increased activity has become the standard strategy in inguinal hernia medical procedure, altogether diminishing hernia repeat rates.[1] Despite

what might be expected, predominance of persistent postoperative crotch torment (CPGI) for example torment past a multi month-postoperative period actually stays huge as paces of CPGI may run somewhere in the range of 15% and 53%, careful methodologies expected to keep away from constant post-hernioplasty torment have been widely discussed, and the aversion of CPGI has gotten one of the essential endpoints of careful examination on inguinal hernia fix.[2]

Thusly, inventive obsession modalities (for example self-holding networks, stick obsession, absorbable stitches), and new material sorts (for example huge pored networks) with self-cement staying or mechanical qualities, have been created to try not to infiltrate trimmings like stitches, clasps and tacks.[3] In any case, a few vulnerabilities actually stay, about the benefits and burdens of such networks as far as persistent torment, as new, inventive lattice clearly doesn't fundamentally lessen the pace of CPGI. [4]

As ProGrip doesn't requires extra obsession, inguinal trench might be shut inside the space of minutes after satisfactory crotch analyzation, eventually shortening working time.[5&6]

Inguinal Hernia is the distension of part of the substance of mid-region through the inguinal area of the stomach divider. This inguinal district is a frail part in the stomach divider because of the presence of inguinal trench, the profound inguinal ring and the shallow inguinal ring. [7]

Advancement in the treatment of inguinal hernias has approached to the mechanical improvements in this field. The main advances to affect inguinal hernia fix have been the expansion of prosthetic materials to regular tissue fixes.[8] Following presentation of cross section for hernia fix, fresher estimates center around post hernioplasty torment disorder, personal satisfaction and recover to ordinary exercises. A maintenance that outcomes in an asymptomatic repeat won't be just about as clinically critical as a maintenance that bestows a lot of constant agony, yet doesn't prompt repeat. [9]

Notwithstanding, this methodology is following by an inadmissibly high pace of persistent torment, deadness and distress beginning from the quick postoperative period to years after medical procedure[10]. Different investigations report that around 19-29% of patients have constant inguinal agony and about 11% of patients uncover persistent inguinal torment was seen during work and recreation exercises. Around 9-26% of patients have deadness and 11-27% of patients report crotch inconvenience[10]. Lichtenstein method uses polypropylene network for back divider reinforcing and is fixed through stitches. Different theory expresses that the conceivable instrument of constant inguinal agony is ascribed to capture of minor or significant nerves by the stitches fixed to work, injury to tendons and muscles during analyzation, network shrinkage and lattice scarring.

## **MATERIAL & METHOD**

Place of Study: MGM Medical College & M.Y. Hospital Indore, M.P. Duration of Study: 18 months. This study will be conducted in 110 consecutive patients who will undergo inguinal hernia repair at the Surgical Department & who fulfills the inclusion criteria. A standard surgical technique will be used. This technique was first described by Bittner. There were two surgeons with experience in this particular technique contributing on the surgeries. Because the goal of this paper is not to test any particular implant but to test the principle of self-

fixation mesh application, we will use self-fixation meshes available on the market. There are two types of self-fixation meshes implant, PP and PPL.

**Inclusion Criteria:** All consecutive patients with age between 18 and 80 years, male or female will be considered eligible for the study. Only patients having a primary inguinal hernia will be eventually included.

**Exclusion Criteria:** Patients will be excluded if they suffered from obstructed hernia. Strangulated hernia, incarcerated hernia, irreducible hernia or with significant co-morbidities.

**Sample Size:** On the basis of number of patients admitted during the course of the study and a minimum of 110 patients to be studied.

**Procedure planned:** Open inguinal hernioplasty.

To observe post-operative pain which will be evaluated based on the visual analogue scale (VAS) 0-10, where 0 indicates no pain, 1-3 mild pain (not evaluated as pain), 4-6 moderate pain and 7-10 severe pain.

**Observation & Results:**

Table 01: Distribution of age of patients in our study:

S.No.	Age	Number	Percentage
1	20-35	14	12.7%
2	36-50	36	32.7%
3	51-65	41	37.3%
4	>66	19	17.3%
	Total	110	

Maximum patients were between 51-65 years of age followed by 36-50 years of age group.

Table 02 Diagnosis in our study:

S. No.	Diagnosis	Number	Percentage
1	Rt Inguinal Hernia With Hydrocele	03	2.7%
2	Rt. Inguinal Hernia	52	47.3%
3	B/L Inguinal Hernia	24	21.8%
4	B/L Inguinal Hernia With Bph	05	4.5%
5	Lt. Inguinal Hernia	26	23.6%
		110	

Most common diagnosis made for surgery was Right inguinal hernia followed by left inguinal hernia, bilateral inguinal hernia, bilateral inguinal hernia with BPH and right inguinal hernia with hydrocele.

Table 03: Distribution of Prolene mesh fixed by suture and ProGrip Mesh

S. No.	Prolene mesh fixed by suture	ProGrip mesh	Total
1	76	34	110
2	69.1%	30.9%	

Table 04: Distribution of Pain according to VAS

S.No.	Pain according to VAS	Number	Percentage
1	02	03	2.7%
2	03	30	27.2%
3	04	35	31.8%
4	05	24	21.8%
5	06	09	8.1%
6	07	06	5.4%
7	08	03	2.7%
		110	

Most patients in our study have moderate pain followed by mild pain and only 8.1% of study population. (visual analogue scale (VAS) 0-10, where 0 indicates no pain, 1-3 mild pain (not evaluated as pain), 4-6 moderate pain and 7-10 severe pain).

Table 05: Distribution of Wound infection

S. No.	Wound infection	Number	Percentage
1	Yes	15	13.6%
2	No	95	86.3%
		110	

In our study 13.6% patients suffered post operative wound infection even after standard antibiotic care.

**Discussion:**

Inguinal hernia is a frequently occurring disease. In our study only inguinal hernia, and different aspects of their respective treatment strategies are discussed. The most common treatment of inguinal hernia is operation with mesh. [11] The use of mesh has become a major component in hernia operations. The performance of the meshes differed in the presence or absence of an infection. In the absence of infection, ProGrip™ performed best. ProGrip™ and XCM Biologic® performed best in the two experiment, taking into account incorporation, mesh shrinkage, adhesion surface, and adhesion strength. Intra-abdominal adhesions can lead to serious complications, therefore the surgeon has an important role in the prevention of adhesion formation. [12]

For the smaller inguinal hernias (diameter ≤4 cm) there is no solid evidence that the use of mesh instead of suture repair leads to better results. Therefore, most surgeons would not use mesh repair for many of these small hernias [13].

The data from the HUMP trial showed that there were significantly more recurrences of inguinal hernia after suture repair compared with mesh repair [14]. These data are similar to previous findings by Arroyo and colleagues (11 percent after interrupted suture repair) and Polat and colleagues [15].

The amount of postoperative complications found in our study was fairly low: 8 percent of patients had complications after mesh repair versus 3 percent of patients after 53 suture repair. In literature the complication rates vary: a previous study of Arroyo and colleagues [16] found complications in 10 percent of patients after mesh repair versus 11 percent after suture repair, and Polat and colleagues found that 15.6 percent of patients had complications

after mesh repair versus 16.7 percent after suture repair. Evidence for the use of mesh in inguinal hernia repair was previously limited to retrospective cohort studies [17], prospective observational studies, hernia register analyses and randomized controlled studies with smaller sample sizes than this study. We suggest mesh repair should be used for operations on all patients with an inguinal hernia of 1–4 cm.

The use of mesh in inguinal hernia has not only advantages, but also leads to complications in certain situations. Complications after inguinal hernia repair pose a significant burden on individual patients and society due to the high numbers of repair procedures worldwide. A well known complication is postoperative inguinal pain. A possible solution to lower the incidence of chronic postoperative inguinal pain could be the use of a self-gripping mesh (ProGrip™ mesh) instead of a sutured mesh.

wound infection was found in 4 out of 21 patients in whom ProGrip mesh was used and 4 out of 49 patients in whom ordinary Prolene mesh was used, whose p value is 0.018 and the result is significant as p value is less than 0.05. The wound infection percentage in our study however was somewhat higher compared with other studies. [18] This could have led to a lower postoperative infection rate. In this study, the mesh did not have to be removed representing a better result than found in the studies of Diaz. Alternatives for the use of biological mesh are explored. These alternatives could be found in the use of biosynthetic meshes (like Phasix™ Mesh, GORE® BIO-A® Mesh, and TIGR® Matrix Surgical mesh). However, Köckerling and colleagues wrote recently consensus review about mesh use in inguinal hernia concluding that there is lack of studies comparing the use of biological or biosynthetic meshes versus synthetic meshes in complex abdominal wall hernia.

#### **CONCLUSION:**

The point of our investigation is to think about the result after Lichtenstein's inguinal hernia fix utilizing ordinary lattice v/s self-focusing Pro grasp network. The essential endpoint of the examination will be the occurrence of post-operative pain. The current examination presumed that Self Gripping Mesh (Pro grasp) fix is better than Polypropylene Mesh in transient results and in certain long terms results like persistent crotch torment. Open Inguinal hernioplasty utilizing Self Gripping Mesh (Pro hold) has better result as far as usable time, Post-usable torment, Hospital stay, Early re-visitation of expert life and ongoing agony.

#### **REFERENCES:**

1. Iisercz Ni, Peeter5 F, Aufenacker T, Bouillot JI, Campanell G, Conzc J. ci al. I pdalewith level I studies of the European Hernia Society guidelines on the treatment of inguinalhernia in adult paticnts. *Hernia*. 2014.
2. Bittner R, Schwarz J. Inguinal hernia repair: Current surgical techniques. *Lan!enbeckArch Surg*. 2011
3. Schmed CC, Sauerland S, Billner R. Comparison of Lichtenstein v/s other open meshtechniques for inguinal hernia repair: A meta-analysis of randomized controlled trials. *Sur2Endosc*. 2005
4. Birk D, Hess S, Garcia-Pardo C. Low recurrence rate and low chronic pain associated with inguinal hernia repair by open hernioplasty by placement of Parietex ProCripT1' mesh: Clinical outcomes of 220 hernias with mean follow-up at 23 months. *Hernia*. 2013

5. Fortelny RH, Schwab R, Glaser KS, Puchner KU, May C, König F. et al. The assessment of quality of life in a trial on lightweight self gripping re-absorbable mesh fixation in open hernia repair. *Hernia*. 2008
6. Memon MA, Cooper NJ, Memon B, Memon MI, Abrams KR. Meta-analysis of randomized clinical trials comparing open hernia repair by Lichtenstein procedure from self gripping semi reabsorbent mesh.. *Br J Surg*. 2003
7. Aufeuckner T, Bay-Nielsen M, Bouillot JL, Campanelli C, Conze J. ciii. European Hernia Society guidelines on the treatment of inguinal hernia in adult patients. *Hernia*. 2009. 61
8. Langeveld HR, van't Rid M, Weidema WF, Strassen LP, Steyerberg EW, Lange J. ci al. Total extraperitoneal inguinal hernia repair compared with Lichtenstein the LE EL Trial) Randomized control trial.
9. Li J, Ji Z, Li L. Comparison of mesh-plug and Lichtenstein for inguinal hernia repair: a meta-analysis of randomized controlled trials. *Hernia*. 2012. Nowobilski W, Jobosz M, Wojciechowski T, Mionskoska L. Lichtenstein inguinal hernioplasty using sutures. Preliminary experience of a prospective randomized trial. *Fur Surg Re*;. 2004
10. Shen YM, Sun WB, Chen J, Li SJ, Wang MG. NRCA medical adhesive (n-butyl-2-cyanoacrylate) versus suture for patch fixation in Lichtenstein Inguinal herniorrhaphy: a randomized controlled trial. *Surgery*. 2012
11. Young DV – Comparison of local, spinal and general anaesthesia for inguinal herniorrhaphy : *Am J Surg* 1987; 153: 560–3
12. Baskerville PA, Jarrett PEM – Day case inguinal hernia : *Ann R CollSurgEngl* 1983; 65: 224–5
13. Kehlet H and White PF. Optimizing anaesthesia for inguinal herniorrhaphy: General, Regional or local anaesthesia? *AnesthAnalg* 2001; 93: 1367 – 9
14. Subramaniam P, Leslie J, Gourlay C, Clezy JK. Inguinal hernia repair: A comparison between local and general anaesthesia. *Aust NZJ Surg* 1998; 68: 799 – 800
15. Lichtenstein IL, Shulman AG, Amid PK et al. The tension free hernioplasty. *Am J Surgery* 1989; 157:188-193.
16. Roder W, Weigel TF, Isemer FE. A concept for decreasing post operative pain after inguinal hernia operation. *Langenbecks Arch Chir* 1994; 379:80-3.
17. O'Dwyer PJ, Serpell MG, Millar K, et al. Local or general anaesthesia for open hernia repair. A randomized trial. *Annals of Surgery* 2003; 237: 574-9
18. Kark AE, Kurzer M, Waters KJ. Tension free hernia repair: review of 1098 cases using local anaesthesia in a day case unit. *Ann R CollSurgEngl* 1995; 77: 299–304.