

## Study of Post Operative Pain & Post-Op Hospital Stay in Patients Operated for Direct Inguinal Hernia by Open v/s Laparoscopic Approach

Dr. Krunal Solanki\*, Dr. Asit Patel\*\*, Dr. Reddemma Kanniganti\*\*\*, Dr. Anil Sanjava\*\*\*\*

\*Associate Professor, \*\*Professor & Head of Unit, \*\*\*3rd Yr. Resident, \*\*\*\*2nd Yr. Resident

Sheth LG Hospital & AMC MET Medical College, Ahmedabad, Gujarat, India

**Abstract:** Introduction: The approaches for hernia repair have undergone a lot of advances and changes with various methods coming up. In this study we will be comparing the post operative outcomes in terms of success rate and complications in laparoscopic TEP and open Lichtenstein hernioplasty. Methodology: The study was conducted by the surgery department of Sheth LG Hospital, Ahmedabad, between the period of August 2016 to July 2018. A total of 60 patients were studied and divided between the 2 equal groups. Patients were selected through Simple random sampling (computer generated) technique. The study was performed to compare the open Lichtenstein repair and laparoscopic mesh repair for direct inguinal hernias in terms of immediate post operative pain and length of hospital stay. Results: Post operative pain was higher in open group as compared to laparoscopic group while post operative hospital stay was lesser in laparoscopic group (1.5 days) as compared to open group (3 days). Conclusion: There is less post operative pain after laparoscopic repair and hospital stay is also comparatively less. Laparoscopic setup might be a cost affecting issue but early return to work can be considered an added benefit, particularly in govt. setups like ours where the patient might be the only earning member of the family. Keeping in view the limitations of Laparoscopic repair the choice between them should be made on a case to case basis depending on patient preference and other characteristics such as age, work, health status and cost etc. [Solanki K Natl J Integr Res Med, 2019; 10(1):17-20]

**Key Words:** Hernia, laparoscopic, lichtenstein, TEP

**Author for correspondence:** Dr. Krunal. Solanki, 502, Rajvansh Apartment, Judges Bungalow, Bodakdev, 380054, Ahmedabad. E-mail: [drkunal\\_0001@yahoo.com](mailto:drkunal_0001@yahoo.com). M : 09924544622

**Introduction:** History of hernia repair is very rich and since ancient times surgeons have tried to improve it bit by bit. Surgical outcome has improved tremendously due to improvements in surgical techniques, prosthetic materials and a better understanding of how to use them. Post operative pain, prolonged hospital stay and recurrence are a common concerns associated with hernia surgery<sup>1-4</sup>.

Success of inguinal hernia repair is judged in terms of permanence of the operation, fewer complications, and earliest return to normal activities. This success largely depends upon the surgeon's competencies, preoperative patient selection and preparation, knowledge and experience of effective use of surgical techniques and currently available materials for repair. Endoscopic hernia surgery has increased significantly with the introduction of newer operating techniques during the past few decades. Prolonged hospital stay and post operative pain are the major concerns for patients immediately after surgery<sup>5-7</sup>.

Laparoscopic hernioplasty is claimed to cause decreased post operative pain and short postoperative hospital stay as compared to open hernioplasty. The aim of this study was to compare the open technique and the

laparoscopic approach concerning post operative pain and hospital stay<sup>8-11</sup>.

**Materials and Methods:** As mentioned above the study was performed to compare the open Lichtenstein repair and laparoscopic mesh repair for direct inguinal hernias in terms of immediate post operative pain and length of hospital stay. The study was conducted by the surgery department of Sheth LG Hospital, Ahmedabad, between the period of August 2016 to July 2018.

A total of 60 patients were studied and divided between the 2 equal groups. Patients were selected through Simple random sampling (computer generated) technique. Inclusion Criteria consist of male presenting to general-surgery clinic which are above thirty years of age with a diagnosis of acquired direct inguinal hernia.

Exclusion Criteria comprised of Patients with contraindications to pelvic laparoscopy, history of repair with mesh, recurrent inguinal hernia, previous pelvic surgery, history of Trans-vesical prostatectomy or patients having Hepatitis B or C positive. Routine baseline investigations of all patients was performed. After obtaining approval by the hospital ethical committee, informed consent was taken from each patient. Pre-anaesthetic evaluation was done before

operation. All the procedures were performed by a single selected team of surgeons and assistants of the same surgical Unit.

Group-I: Patients underwent hernioplasty by open method (Lichtenstein’s repair).

Group-II: Patients underwent hernioplasty by laparoscopic method (TEP).

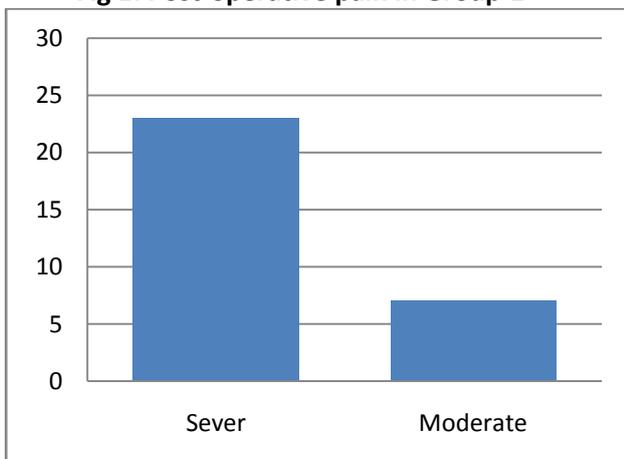
Laparoscopic repair was performed by Totally Extra-Peritoneal Hernioplasty approach by 3 port technique. Classical Open Lichtenstein’s repair was performed in the other group.

Postoperatively, patient’s perception of pain was assessed by Visual Analogue Scale (VAS) about four hours after surgery. All patients received analgesia in the form of Inj. Diclofenac sodium 75mg diluted i/v immediately after surgery and it was repeated only after 12 hours.

No preoperative or peroperative analgesia was given to any patient. All the patients were given instructions not to restrict their activities postoperatively unless the activities cause pain. All patients were assessed for postoperative analgesia requirements and hospital stay. Length of postoperative hospital stay was calculated in terms of Days after surgery till the patient was discharged.

**Results :** Of the total of 60 patients operated the age varied between 35-75 years. The range of postoperative pain experienced by the patients as per VAS was between 2-9.

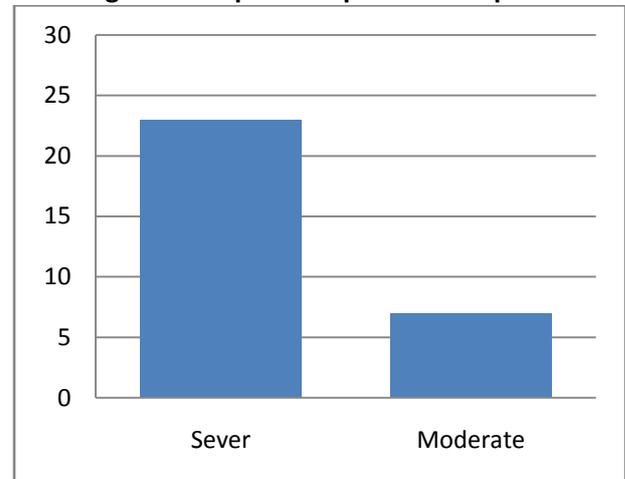
**Fig 1: Post-operative pain in Group-1**



The postoperative pain severity (ranked as mild, moderate and severe) showed severe type of pain experienced in approximately 63.33%(19) of patients of Group-I (open hernioplasty) followed by moderate severity in remaining 36.66%(11)

Patients (Fig-1). In group-II (Laparoscopic repair), majority of patients experienced moderate 76.66%(23) and mild 23.33%(7) severity of pain respectively(Fig-2).

**Fig 2: Post-operative pain in Group-2**



The mean post operative hospital stay for patients operated by open technique was 3 days post operatively ranging between 2 to 6 days and the mean postoperative stay for patients operate by laparoscopic technique was 1.5 days ranging from 1<sup>st</sup> post operative day to 6<sup>th</sup> postoperative day.

**Discussion :** The conventional surgery of groin hernias has been to reduce the hernia sac and reconstruct the posterior wall through an open incision. Although this operation can be performed as day care procedure in selected cases with the use of local anaesthesia but it has been presumed that open hernioplasty is associated with increased postoperative pain, prolonged hospital stay, more recurrence and a delayed return (four to six weeks) to full physical activity and employment.

The rates of hernia recurrence after open repair reported in literature are low as less than 2 percent, but recurrence rates in regionalized studies of heterogeneous populations have averaged 5 to 10 percent for primary hernias and 5 to 30 percent for recurrent hernias. These problems with conventional hernioplasty provided the impetus to develop a laparoscopic approach to hernia repair. Laparoscopic inguinal hernia repair has been around since late 1980s and early 1990s. Principal advantages of the laparoscopic approach over traditional surgeries reported in literature are, reduced postoperative pain, shorter hospital stays, and shorter periods

of disability. The public awareness of the recent advances and advantages of laparoscopic surgeries have lead to a generalised increase in demand of laparoscopic hernia repairs. Recently the single port robotic surgery for hernia is also used in specialized centres.

In contrast with the open repair, Laparoscopic repair of inguinal hernias is performed with the use of general anaesthesia and three laparoscopic ports. Several techniques for laparoscopic hernioplasty have been used, including closure or plugging of the hernia and various types of patch repairs. Patch repair is currently the most common method and entails placing a large prosthetic mesh internally to cover the hernia and inguinal floor.

Conceptually, this operation is similar to the open preperitoneal approach advocated by Stoppa et al<sup>10</sup>, who used a large “tension-free” patch to cover the entire inguinal floor, with a subsequent recurrence rate of 1.4 percent. It appears, however, that laparoscopic hernia repair is associated with less postoperative pain and an earlier return to full physical activity than conventional hernioplasty.

Despite the favourable early results, the procedure is controversial. Although the operation is similar to the repair described by Stoppa et al<sup>10</sup>, the different method for fixation of the mesh laparoscopically adds an element of uncertainty to long-term stability and security.

Regarding post operative pain, it is reported in literature that the laparoscopic repair is associated with less pain as compared to open hernioplasty. The p value for postoperative pain is 0.005 in our study which is quite significant and concludes that the patient who had laparoscopic hernioplasty experienced less pain postoperatively as compared to those having open hernioplasty. The same results were also concluded from the review of 41 Cochrane studies, TULIP Trial and other studies<sup>9</sup>. Many national and international studies also conclude no significant difference in morbidity and recurrence between both modalities but operating time is more in laparoscopic hernioplasty.

Regarding hospital stay, our results shows that there is a significant statistical difference regarding postoperative hospital stay in either

open or laparoscopic hernia repair. These findings are consistent with the many other studies carried out at different centres. Literature search showed that there are many trials which have reported same results for example Pironi D et al., Neumayer et al<sup>8</sup> and Mahon et al.

To date, recurrence rates with the laparoscopic preperitoneal prosthetic-patch operation have been low, but the follow-up has been short. Since most recurrences after conventional hernioplasty develop five or more years after the original operation, the long-term rates of recurrence may prove unacceptably high, especially when the procedure is performed by an inexperienced surgeon.

**Conclusion :** There is less post operative pain after laparoscopic repair and hospital stay is also comparatively less. Laparoscopic setup might be a cost affecting issue but early return to work can be considered an added benefit, particularly in govt. setups like ours where the patient might be the only earning member of the family. Keeping in view the limitations of Laparoscopic repair the choice between them should be made on a case to case basis depending on patient preference and other characteristics such as age, work, health status and cost etc.

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