



## Lap And Open Hernioplasty Comparison Study

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## ABSTRACT

This prospective study was conducted to compare the open Lichtenstein repair and laparoscopic mesh repair for inguinal hernias in terms of immediate post operative pain at father muller medical college hospital ,mangalore from October 2015 to December 2015. All patients admitted with inguinal hernia, ASA III, were randomly divided in two equal groups. Group-I, patients underwent Lichtenstein tension-free hernioplasty and Group-II had hernioplasty by laparoscopic method (TAPP or TEP). Post-operative pain intensity assessed by VAS. A total 66 patients of inguinal hernia were studied. The mean post-operative pain intensity as per VAS was 6.26 in Group-I and 4.46 in Group-II patients. There is definitely less post-operative pain after laparoscopic hernia repair.

## KEYWORDS

Inguinal Hernia, Lichtenstein's tension free hernioplasty, Laparoscopic hernioplasty, Post-operative pain.

## INTRODUCTION

Hernioplasty is one of the commonest general surgical procedures performed. 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 problem associated with hernia surgery. Failure rate of less than 1% is reported from centers specialized in hernia surgery in contrast to much higher recurrence form non specialized centers.<sup>1</sup> Success of groin hernia repair is measured primarily by the permanence of the operation, fewest complications, minimal costs, 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.<sup>2</sup> Prolonged hospital stay and post-operative pain are of more concern for patients immediately after surgery. Surgeons performing laparoscopic hernioplasty claim that there is decreased postoperative pain and short postoperative hospital stay as compared to open hernioplasty<sup>3,4</sup>. The aim of this study was to compare the open technique and the laparoscopic approach concerning post-operative pain.

## METHODS

The objective of the study was to compare the open Lichtenstein repair and laparoscopic hernia repair for inguinal hernias in terms of immediate post-operative pain. This prospective study was conducted at father muller medical college hospital Mangalore three months from October to December 2015. A total of 66 patients were studied and divided between the two equal groups. Inclusion Criteria consist of patients admitted with inguinal hernia above 20 years of age and Patients of ASA I & II category. Exclusion Criteria comprised of Patients with contraindications to pelvic laparoscopy, recurrent inguinal hernia, previous pelvic surgery. Routine baseline of all patients was checked. After obtaining approval by the hospital ethical

committee, informed consent was taken from each patient. Pre-anesthetic evaluation was done before operation. Group-I: Patients underwent hernioplasty by open method (Lichtenstein's repair).Group-II: Patients underwent hernioplasty by laparoscopic method (TAPP or TEP).Postoperatively, patient's perception of pain was assessed by Visual Analogue Scale (VAS) about 12,24,48 hours after surgery. VAS scores from 0 to 3 correspond to mild pain, for which patients do not seek analgesia. Scores from 4to6 represent moderate pain and 7to10 severe pain All patients received analgesia in the form of paracetamol infusion immediately after surgery and it was repeated only after six hours. No preoperative or peroperative analgesia was given to any patient. All the patients were given standardized postoperative instructions not to restrict their activities unless the activities cause pain. All patients were assessed for postoperative analgesia requirements. Comparison of severity of postoperative pain in laparoscopic and the open hernioplasty group calculated in terms of hours after surgery till the time when patient was discharged. The discharge time was the time mentioned in patients notes. Mean calculated for all quantitative data (age,postoperative pain,).Frequencies and percentages were calculated for qualitative data (age).

## RESULTS

A total of 66 patients having inguinal hernia admitted through the surgical OPD from october to December 2015. The age varies between 20-70 years with a mean age of 35(Table-I). Patients were similar in demographic characteristics, all belonging to ASA I or II class.Type of operation performed as shown in (Table 2). The postoperative pain severity(ranked as mild, moderate and severe) showed severe type of pain experienced in 53.33% patients(n=22) in Group-I (open hernioplasty) followedby moderate severity in 33.34% (n=11) Patients.In group-II (Laparoscopic repair), majority of patients experienced moderate (63.34%, n=25) and mild (20%, n=8) severity of pain respectively. The mean post operative pain intensity as per VAS was 6.26 in group-I and 4.46 in group-II patients(Table 3)

**DISCUSSION**

The conventional surgery of 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 (less than 2%) in specialized centers, but recurrence rates in regionalized studies of heterogeneous populations have averaged 5-10% for primary hernias and 5-30% for recurrent hernias.<sup>2</sup> Principal advantages of the laparoscopic approach over traditional surgeries reported in literature are, reduced postoperative pain, shorter hospital stays, and shorter periods of disability.<sup>5</sup> Laparoscopic repair of inguinal hernias is performed with the use of general anesthesia. It appears, however, that laparoscopic hernia repair is associated with less postoperative pain and an earlier return to full physical activity than conventional herniorrhaphy.<sup>6,7</sup> Regarding post operative pain, it is reported in literature that the laparoscopic repair is associated with less pain as compared to open hernioplasty. Postoperative pain 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 hernia surgery. The same results were also concluded from the review of 41 Cochrane studies,<sup>8</sup> TULIP Trial<sup>9</sup> and other studies.<sup>10</sup> On the contrary, a multicenter trial conducted at Austria concludes no significant difference in complications and recurrence rate between laparoscopic and open hernioplasty.<sup>11</sup> Similarly, a meta analysis conducted at Aberdine, UK conclude that the open and laparoscopic hernia repair are equally effective procedures and 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 etc.<sup>12</sup> To date, recurrence rates with the laparoscopic preperitoneal prosthetic-patch operation have been low, but the follow-up has been short.<sup>4,6,7</sup> Since most recurrences after conventional herniorrhaphy 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. A recent trial conducted by Brandt and his colleagues reported that the recurrence rate after 13 years of endoscopic total extra-peritoneal hernia repair is of 8.5% for primary and 10.8% in recurrent hernia with an overall 8.9% recurrence rate.<sup>13</sup> Laparoscopic hernia repair also requires a general anesthesia, with its associated risks, for a procedure that can be done conventionally with local anesthesia in selected cases. There is a small but definite risk of serious injury to intra-abdominal organs that is not associated with traditional inguinal herniorrhaphy. Also, costs may be higher because of the need for expensive equipment and other supplies related to laparoscopic instrumentation.<sup>14,15</sup> Unlike those for laparoscopic cholecystectomy, these increased costs are not offset by decreased hospital charges, since hernia operations are routinely outpatient procedures regardless of the method of repair. A recent comparison of conventional with laparoscopic hernia repair indicated an average increase in cost of 135 percent with the laparoscopic approach. Whether these direct costs may be partially offset by an earlier return to employment is not known.<sup>15,16</sup> The safety and efficacy of laparoscopic inguinal hernia repair have recently been evaluated in two multi-institutional reports.<sup>17</sup>

**CONCLUSION**

There is less post operative pain after laparoscopic repair. 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.

**Table 1**  
**Characteristics of the patient**

|                      | Number | Range       |
|----------------------|--------|-------------|
| Total no of patients | 66     |             |
| Male                 | 60     |             |
| Female               | 6      |             |
| Mean age             | 35     | 20-70 years |

**Table no 2**  
**Types of repair performed**

|                           |    |
|---------------------------|----|
| Lichtenstein hernioplasty | 33 |
| TEP                       | 10 |
| TAPP                      | 23 |

**Table no 3**  
**VAS Score**

|          | Period Hours | Mean vas score (Group 1) | Mean vas score (Group 2) |
|----------|--------------|--------------------------|--------------------------|
|          | 12           | 7.8                      | 5.8                      |
|          | 24           | 7                        | 4.8                      |
|          | 48           | 4                        | 2.8                      |
| Mean vas |              | 6.26                     | 4.46                     |

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