

ORIGINAL RESEARCH

Postoperative Outcomes of Laparoscopic vs Open Inguinal Hernia Repair: A Comparative Evaluation at a Tertiary Care Hospital

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ABSTRACT

Background: Inguinal hernia repair continues to be one of the most common general surgery procedures. The present study was conducted to compare postoperative Outcomes of Laparoscopic vs Open Inguinal Hernia Repair. **Materials & Methods:** The present study was conducted over a period of 1 year among 40 patients. The patients were randomly divided into two groups, each group consisting of 20 in each. Group 1 were operated with open tension free Lichtenstein's hernioplasty. Group 2 operated by laparoscopic totally extraperitoneal repair using mesh. The mean operative time for surgery, pain score was measured by using ANOVA. All values $p < 0.05$ were considered statistically significant. **Results:** In the present study, the mean operative time for group 2 was more than group 1. The postoperative VAS score for group 1 was more than group 2 at 0 minutes, 6 hours, 12 hours and 24 hours. This difference was shown to be statistically significant. Group 1 needed postoperative analgesia in 80% of cases whereas group 2 required only in 25% cases. The difference in the two groups in regard to the need for post operative analgesia was statistically significant (p value = 0.000). **Conclusion:** The present study concluded that the postoperative VAS score and need of post operative analgesia was less for Laparoscopic hernia repair than open hernia repair.

Keywords: VAS score, post operative, Inguinal Hernia Repair

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INTRODUCTION

Inguinal hernias are one of the most common abdominal pathologies requiring surgery,¹ with the lifetime risks of developing an inguinal hernia estimated to be 27% for men and 3% for women.² There are two methods for inguinal hernia repair: the open approach and the laparoscopic approach. Although the laparoscopic approach has been shown to have less postoperative pain and chronic pain and a faster recovery time in the general population, this technique has several limitations. The laparoscopic technique not only requires a long learning curve for the surgeon, but also requires that the patient must be placed under general anesthesia.³ Preferred approach for open inguinal hernia repair is Lichtenstein's tension free inguinal hernioplasty using a prosthetic mesh.⁴ A nationwide register-based study in Denmark revealed that patients aged 75–80 years

constituted one of the major groups for inguinal hernia repair.⁵ The present study was conducted to compare postoperative Outcomes of Laparoscopic vs Open Inguinal Hernia Repair.

MATERIALS & METHODS

The present study was conducted in Department of General Surgery, Saraswathi Institute of Medical Sciences, Anwarpur, Hapur, Uttar Pradesh (India) over a period of 1 year among 40 patients. Before the commencement of the study ethical approval was taken from the ethical committee of the institute and informed consent was taken from the patient after explaining the study. Patients with uncomplicated inguinal small or medium sized, direct or indirect, unilateral or bilateral hernias undergoing elective inguinal hernia surgery, who are fit for laparoscopy and general anesthesia, were included in the study.

Patients with complicated hernia (irreducible, obstructed, strangulated), those with large size sac, recurrent hernia, those unfit for general anesthesia, laparoscopy or pneumoperitoneum i.e. those with cardiac diseases (MI, IHD), respiratory diseases (chronic asthma, COPD), renal or hepatic diseases, bleeding disorders etc were excluded from the study. All patients were clinically evaluated and underwent routine investigations for fitness. Even elderly patients with American Urological Association (AUA) Score for prostate of more than 6 also underwent evaluation for prostate by digital rectal examination, ultrasonography, and cystourethroscopy. The patients were randomly divided into two groups, each group consisting of 20 in each. Group 1 was operated with open tension free Lichtenstein's hernioplasty & Group 2 operated by laparoscopic totally extraperitoneal repair using mesh. Patients were admitted one day prior to surgery. They were operated as per allotted group and relevant operative findings were noted. The antibiotic protocol was perioperative antibiotics only, consisting of three intravenous doses of inj.

ceftriaxone 1 gm. In patients with the drain, antibiotic was continued till the drain was removed. The analgesic used was diclofenac sodium 50 mg tablet 12 hourly and pain was recorded on visual analogue score (VAS) at 0 min, 30 min, 1 hour, 2 hours, 4 hours, 6 hours, 12 hours and 24 hours after surgery. The need for any rescue analgesic was also noted. The patients were encouraged to move in the early postoperative period and to take liquid diet on the evening of surgery. Foley's catheter, which was inserted in all patients in group 2 and elderly patients of group 1, was removed in the evening and the patients were discharged in the morning after surgery. The patients who had drains were discharged only after removal of the drain, which in most cases was done 48 hours after surgery. The patients were clinically evaluated for any mesh displacement before discharge. Sutures were removed between 7-10 days. Patients were evaluated. All the parameters were compared between the two groups. The mean operative time for surgery, pain score was measured by using ANOVA. All values $p < 0.05$ were considered statistically significant.

Table 1: Comparison of study variables

| Variables | Group 1 | Group 2 | P value |
|---|------------|------------|---------|
| Mean operative time | 56.27±4.64 | 76.08±5.98 | |
| Postoperative pain score (VAS) | | | |
| 0 minutes | 2.49±1.88 | 1.26±1.23 | 0.000 |
| 6 hours | 5.28±2.16 | 2.73±0.97 | 0.000 |
| 12 hours | 5.78±1.93 | 3.48±1.36 | 0.000 |
| 24 hours | 6.36±2.86 | 3.79±1.56 | 0.000 |
| Need of analgesia post operatively | | | |
| Required | 16(80%) | 5(25%) | 0.000 |
| Not required | 4(20%) | 15(75%) | |

RESULTS AND DISCUSSION

Laparoscopic surgery has led to many changes in the management of surgical patients and significantly reduced the morbidity associated with open surgical procedures.⁶ At present, the laparoscopic repair of hernias gained clinical importance in patients with bilateral or recurrent hernias or in patients. It has no surgical weakness postoperatively.⁷

In the present study, the mean operative time for group 2 was more than group 1. The postoperative VAS score for group 1 was more than group 2 at 0 minutes, 6 hours, 12 hours and 24 hours. This difference was shown to be statistically significant. Group 1 needed post operative analgesia in 80% of cases whereas group 2 required only in 25% cases. The difference in the two groups in regard to the need for post operative analgesia was statistically significant (p value = 0.000).

Mwagiru DK, et al compared open vs laparoscopic inguinal hernia repair in terms of types and quantity of analgesics administered during the postoperative recovery period and the hospital stay, including the influences of patient characteristics such as age, BMI, and previous inguinal hernia repair. Among 63 patients (60 males), 62% had undergone open and 38% laparoscopic surgery for inguinal hernia repair.

Type and dose of analgesic medications given during both the postoperative recovery period and the hospital ward stay and the duration of the hospital stay were not significantly different between open and laparoscopic groups. However, there were significant influences of BMI, with significantly more overweight and obese patients requiring a combination of opioids with nonsteroidal anti-inflammatory drug (NSAID) or paracetamol during the hospital stay, and with obese patients having the longest hospital stay, followed by overweight patients. Patients who had open surgery were significantly older and less likely to have had a previous inguinal hernia repair than those who had laparoscopic surgery, and there was a significant correlation between age and duration of hospital stay.⁸ Rathod CM et al found that during the study no major life-threatening complications were reported in either group only peritoneal breach was encountered intraoperatively in the TEP group, and the difference found to be significant (p value = 0.000). Post operative necessity of drain was seen in 9 patients out of 30 in TEP group. There were three (12%) cases of immediate mesh displacement in TEP group but none in the OH group. It was observed that the meantime taken to complete a laparoscopic hernia repair was significantly higher (p value = 0.000) in TEP

compared to open procedure. The postoperative pain score and need of analgesics, presence of surgical site infections was more in OH group compared to TEP group. The time taken for resumption of daily activities and work was earlier in patients treated with TEP compared to open surgery and good significant cosmetic results was also observed with the same group only.⁹

A study by Sudharshan showed a similar pain score in post operative day 1 in both groups.¹⁰

CONCLUSION

The present study concluded that the postoperative VAS score and need of post operatively analgesia was less for Laparoscopic hernia repair than open hernia repair.

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