Postoperative Pain in Laparoscopic Transabdominal Preperitoneal Versus Lichtenstein Open Mesh Repair Techniques for Inguinal Hernia

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ABSTRACT

Objective *To compare mean postoperative pain and analgesic consumption in laparoscopic Transabdominal preperitoneal (TAPP) versus Lichtenstein open mesh repair techniques for inguinal hernia.*

Study design *Randomized controlled trial.*

Place & Duration of study *Surgical Unit-I Jinnah Postgraduate Medical Centre (JPMC) Karachi ,from Novmber 2013 to April 2015.*

Methodology *A total of 162 patients with inguinal hernia were included in the study. Group A underwent TAPP technique repair and group B Lichtenstein open mesh repair. Patients in both the groups were given injection diclofenac 50mg 12 hourly after surgery. Early postoperative pain was assessed on Visual Analogue Scale (VAS) score. Analgesic consumption was was defined as more than 2 doses in the first 24 hours or more than 3 score on visual analogue scale. Final outcome in terms of mean postoperative pain, and analgesic consumption, was assessed at 24 hours.*

Results *Out of total 81 patients underwent TAPP repair and 81 open hernia repair. Mean pain score in TAPP group was 39.38+5.811 while patients operated through open technique 60.37+6.246. Significant difference was observed between two groups in terms of mean postoperative pain and analgesic consumption. Among TAPP group 9 (11.1%,) patients while in open group 3 (40.7%) patients had analgesic consumption.*

Conclusion *Patients who underwent TAPP laparoscopic inguinal hernia repair had significantly low mean postoperative pain and hence analgesic consumption requirement as compared to open Lichteinstein mesh reapir.*

Key words *TAPP, Lichtenstein repair, Pain score, Analgesic consumption.*

INTRODUCTION:

Inguinal hernia is the most common hernia encountered in surgical practice. It accounts for 90% of all spontaneous hernias.[1] Herniorrhaphy is the second most common procedure in the world with more than 500,000 inguinal herniorrhaphy procedures performed annually in the United States.[2,3.]

Lichtenstein repair is considered the “gold standard “and is most commonly used mesh technique in open surgery.[4] Laparoscopic inguinal hernia repair is done through two approaches, TAPP and TEP. In recent years laparoscopic inguinal hernia repair has gained popularity.[5] Advantages of laparoscopic over open repair in terms of less postoperative pain, resumption of daily activities and earlier return to work have been reported in several studies.[2,3,6,7]

TAPP is technically easy and provides better access to anatomy.[8] No specialzed equipment is

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required for surgery. Furthermore, when repairing recurrent hernias, it does offer an advantage of dissection in previously non damaged areas. Bilateral inguinal hernias can also be repaired without extra incision and recovery is very quick.[6]

Pain is considered to be the most important factor in early recovery following any surgery. It has been documented that minimally invasive surgery for inguinal hernia repair is beneficial to the patients.[9] This study was conducted to compare postoperative pain and analgesic consumption in laparoscopic TAPP and Lichtenstein methods of repair for hernia with early discharge home in our clinical practice where long waiting list is always an issue.

METHODOLOGY:

This comparative study was conducted at Jinnah Postgraduate Medical Center Karachi, from November 2013 to April 2014. The objective of the study was to compare laparoscopic TAPP and open Lichtenstein mesh repair in terms of postoperative pain. A total 162 patients presenting with the diagnosis of inguinal hernia were included. Consecutive non probability sampling technique was used. All patients of age between 25-50 years with unilateral reducible inguinal hernia, were enrolled. Patients with Irreducible, bilateral or recurrent inguinal hernia, previous abdominal surgery, any bleeding diathesis, and uncontrolled comorbid, were excluded.

After written informed consent, two groups A and B were made by lottery method. Group A patients underwent TAPP technique and group B Lichtenstein open mesh repair. Early postoperative pain was assessed on VAS scale and analgesic consumption (patient requiring more than 2 doses in the first 24 hours or more than 3 score on VAS were labeled as analgesic consumption). Pain score was recorded 6 hours after surgery as a baseline score. Diclofenac sodium (50 mg) injection was used in both the groups for analgesia and pain was agin recorded on VAS after 12, 18 and 24 hours.

Final outcome (mean postoperative pain, analgesic consumption) was assessed at 24 hours and data was entered on predesigned form. Data were analyzed through SPSS version 17. Student t test was used for statitistical analysis. P valve less than or equal to 0.05 was taken as significant.

RESULTS:

A total of 162 patients fulfilling the inclusion criteria were included in this study. Mean pain score of TAPP group was significantly less than of open group as shown in table I (39.38+5.811 vs 60.37+17.6.246). Total number of patients who required analgesics consumption (more than 2 doses in the first 24 hours or more than 3 score on visual analogue scale) was 42 (25.9%), and out of this 9 (11.1%) were of TAPP group A and 33 (40.74%) were of open group B.

DISCUSSION:

Laparoscopic TAPP repair is associated with greater patient satisfaction and better cosmetic results than Lichtenstein open mesh repair. Laparoscopic hernia repair seems to be as good as, if not superior to, the existing open Lichtenstein repair in terms of postoperative pain, hospital stay, return to work, and cosmetic appearance and recurrence rates. It is possible to achieve high standards even during the learning phase of the surgeon if there is strict adherence to the protocols. In one study the TAPP technique took no longer to perform, and was associated with less postoperative pain, a shorter period of sick leave, faster recovery, and improved quality of life compared with open Lichtenstein hernia repair.[10-13]

Neumayer et al suggested that surgeons performing TAPP should have experience of between 25 -30 laparoscopic repairs.[14] Until this point they should be supervised by experienced surgeons. Eklund et al mentioned this number as 25 and and Langeveld et al as 30.[15,4] This in an attempt to minimize complications.

Our study demonstrated that pain was significantly less in patients who underwent TAPP technique as compared to open Lichtenstein mesh repair. Several other studies have evaluated postoperative pain showing that in general, pain was lower in patients who underwent TAPP compared to Lichtenstein repair.[16,17] However, it should be noted that there was no standardized scale for assessing pain across in these studies. Since pain perception and analgesic requirement are variable, a bias could surface when patients are asked to grade their own pain levels.

Table I: Mean Pain Score With Type of Technique Used

Technique used	Number (n)	Mean score	P value
TAPP (Group A)	81	39.38+5.811	< 0.001
Open Repair (Group B)	81	60.37+6.246	

Thus a more objective method of pain measurement is preferable.

Gokalp et al showed that there was no significant difference in the pain scores between the two groups.[18] This inconsistency could possibly be due to the low power of the study as well as possible differences in anaesthetic pain management between hospitals. Eklund et al reported that patients did not always use the prescribed analgesic drug after surgery.[15] However, it is unlikely to have affected the results of our since same drug was used in both the groups. TAPP causes significantly less pain in the recovery phase. This has a direct correlation with return to normal daily activity/work but same is not evident in the long-term follow up.

TAPP repair is found to cause less postoperative pain than open repairs. However most randomized trials assessing postoperative pain between open tension-free repairs and laparoscopic repairs report less pain in the laparoscopic groups. In many cases this also results in less analgesia being consumed by the patient.[19,20] Laparoscopic repair is more advantageous than open repair in the working age group as it offers a significantly faster return to work. This is due to reduced postoperative pain, decreased infection rate and fewer chronic complications.

CONCLUSIONS:

TAPP technique for inguinal hernia reapair resulted in significantly less mean postoperative pain. There was less analgesics consumption as compared with with open Lichtenstein mesh repair.

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