

LAPAROSCOPIC VS LICHTENSTEIN HERNIA REPAIR:A LOCAL EXPERIENCE

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ABSTRACT

Objective: To compare the operative time, the postoperative pain scores, duration of hospital stay and wound infection rates between Lichtenstein and totally extra peritoneal (TEP) laparoscopic hernia repair for direct inguinal hernias.

Design: Comparative study.

Place and Duration of study: This study was conducted at surgical unit 1, Benazir Bhutto hospital and surgical unit 1, Holy Family hospital, Rawalpindi from 1st July 2007 to 31st December, 2010.

Patients and Methods: A total of hundred patients were divided into open and laparoscopy groups and their age, sex, operative times, pain scores, duration of hospital stay and wound infections were compared and analyzed.

Results: Mean age was 60.7 (\pm 9.2) years for open group and 59.7 (\pm 9.3) for the laparoscopic group. Time for surgery was 48.9 minutes in open and 49.0 minutes in the laparoscopic group. Pain scores at 2 hours and 24 hours after surgery were significantly less in laparoscopic group as compared to open group. Hospital stay was 39.6 hours in open versus 31.4 hours in the laparoscopic group, which was also significant. There was no case of wound infection in either groups, requiring operative intervention or mesh removal.

Conclusion: The laparoscopic approaches to hernia repair have clear advantages, including lesser post operative pain and shorter hospital stays.

Keywords: Laparoscopic hernia repair, Liechtenstein repair, Hernia.

INTRODUCTION

Inguinal hernias are more common with a lifetime risk of 27% in men and 3% in women¹. Inguinal hernia repair is one of the commonest operations in the general surgery wards with a rate of 28 per 100,000 in the United States².

Since its description two decades ago the Lichtenstein tension free mesh repair has opened a new era in groin hernia repair³. This technique was described for all inguinal hernias small or large, complex or straight forward and maintained that essential components included easy learning curve, immediate ambulation, less post operative pain and early discharge and all of this has contributed to its overall success. In terms of recurrence rates, patient centered outcomes, and cost has become the gold

standard of all hernia repair⁴.

Laparoscopic inguinal herniorraphy was first described by Ger, Schultz, Corbitt and Fillipi in the early 1990s⁵⁻⁸. Both intra and extra peritoneal approaches have been adapted to repair inguinal hernias and over the last decade much work has been done primarily to determine whether the laparoscopic or the open approach is better and secondarily which of the laparoscopic approach is preferable.

The laparoscopic herniorraphy accounts for 15 to 20% of hernia operations in America and around the world⁹. Most laparoscopic inguinal hernia repairs are performed with placement of a synthetic mesh into the preperitoneal space, which can be accomplished in one of two ways: the trans abdominal preperitoneal (TAPP) approach or the totally extraperitoneal (TEP) approach. The TAPP approach, first described by Arregui and colleagues in 1992, requires laparoscopic access into the peritoneal cavity and placement of mesh in the preperitoneal space after reducing

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the hernia sac. The first TEP inguinal hernia repair was described by McKernan and Laws in 1993. This approach involves preperitoneal dissection and mesh placement without entering into the abdominal cavity^{10,11}.

Despite the intense study and work devoted to laparoscopic herniorraphy, the rise of this procedure into the practice of surgeons around the world remains much less than originally thought by laparoscopic enthusiasts. Much of this is due to fierce competition offered by the Lichtenstein repair which still remains the gold standard in most cases to this date.

Thus the objective of this study was to compare the operative time, the post operative pain scores, duration of hospital stay and wound infection rates between Lichtenstein and totally extra peritoneal (TEP) laparoscopic hernia repair for direct inguinal hernias.

MATERIAL AND METHODS

This study was conducted in surgical unit 1, Benazir Bhutto hospital and Holy Family hospital, Rawalpindi from 1st July 2007 to 31st December, 2010. After approval by the hospital ethics committee 100 patients with direct inguinal hernias were divided into either the open or the laparoscopic group.

2. Patients who had a direct inguinal hernia were included.

3. Only the patients belonging to ASA class I or II were included.

Exclusion criteria were

1. Patients with previous abdominal surgery which were excluded from the laparoscopic group.

2. All the patients with a recurrent inguinal hernia were also excluded.

3. The patients presenting in emergency with obstructed or strangulated hernias were also excluded.

Patients admitted from the OPD were included and their clinical data was obtained on proformas. Their date of admission, date of surgery and the surgical procedure (Lichtenstein repair versus TEP) they underwent were noted. All operations were performed by senior consultant surgeons. All the procedures were performed under general anesthesia so that postoperative pain scoring could be done under similar conditions. Post operatively the patients were followed for their pain scores, signs of wound infection and their date of discharge from hospital. The patients were followed for up to 4 weeks for any evidence of wound infection. We compared

Table-1: Comparison between open hernia (group 1) repair and laparoscopic (group 2) repair.

Study variables	Group1(n=50) mean ± SD	Group2(n=50) mean ± SD	p-value
Age in years	60.78±9.20	59.70±9.35	0.732
Duration of surgery in minutes	48.98±13.03	49.08±11.25	0.246
Pain scores at 2 hours	6.04±0.78	4.90±0.99	0.019
Pain scores in 24 hours	3.60±0.60	2.40±0.49	0.005
Duration of post operative hospital stay	39.60±07.36	31.40±5.87	0.004

Only the patients fulfilling the inclusion and exclusion criteria were included in this study.

Inclusion criteria were

1. Patients between 45 to 70 years of age were included.

differences in mean hospital stay, the difference in pain scores, duration of hospital stay and wound infection among those undergoing Lichtenstein and TEP laparoscopic hernia repair using independent sample t-test. Data had been analyzed using SPSS version 15.

Descriptive statistics were used to describe the data.

RESULTS

A total of hundred patients were included in this study, fifty in each, either the open repair and laparoscopic repair. All of the patients were male. The mean age of presentation was 60.87 years (± 9.2) for open group and 59.7 years (± 9.3) for the laparoscopic group. Most notably it was seen that there was a significant difference in the pain scores between laparoscopic and open group after 2 hours ($p=0.019$) and 24 hours ($p=0.005$). The time taken for surgery was almost similar in the two groups. There was also a significant difference in duration of post operative hospital stay between laparoscopic and open repair groups ($p=.004$). However, no significant infection was noted in either group, necessitating operative intervention or removal of the mesh.

DISCUSSION

Both the laparoscopic and open mesh repair of hernia were introduced in the 1990s and both have revolutionized the techniques of hernia repair. The Lichtenstein or open mesh repair had an easier learning curve and became popular in a very short time. Despite intense study devoted to laparoscopic inguinal hernia repair acceptance of this procedure has been slow. It is usually reserved for specific indications and performed by surgeons specializing in this technique. By the end of the 1990s, it had the chance of persistent pain, compared with the conventional sutured repairs^{12,13,15}.

The average age of patients included in our studies was the early sixth decade of life and the range was between 45 and 70 years, Tanphiphat et al in their trial had a relatively younger group of patients in their fourth and early fifth decades of lives respectively¹⁵. The European Union Hernia Trialist Collaboration collected and analyzed data from 34 trials including 6804 patients and their mean age varied from 38.7 to 67.5 years¹⁶.

The operative time in both groups of our study was almost the same. Literature from all over the world shows laparoscopic repair to take a longer time than the open method. Two multicenter randomized trials collected operative time data and reported operative times that were 15 and 27 minutes longer in the laparoscopic group. The meta analyses that reviewed this subject had similar results¹⁷⁻¹⁹. The important issues regarding operative time centered on surgeon experience, clinical relevance, and cost. Operative times decrease after approximately 30 to 50 cases^{20,21}. It is unlikely that a decrease in operative time of 15 to 30 minutes will have any measurable clinical benefit. However, in terms of cost, the effect could be important¹⁴.

Our study showed a significant reduction in pain scores, 2 hours and 24 hours, after surgery in the laparoscopic group as compared to the open group. Most studies comparing TEP to open mesh repair found that pain in the preoperative period is significantly less after laparoscopic inguinal hernia repair, which is one of the major advantages of most laparoscopic operations^{14,22,23,24}. While others like Heikinen et al and Pelligrini et al have found no significant difference in pain reduction between the two groups^{25,26}.

The single complication that was followed in our study, during the four week follow up, was wound infection and there was no reported case of wound infection in both the groups, requiring surgical intervention. Minor superficial skin infections were treated by antibiotics alone. In the different trials and meta analysis across the world wound infection was never a major complication in any of the reviews¹⁴.

The time to discharge in our study was significantly shorter in laparoscopic group when compared to open group. Tanphiphat et al in their series in 1997 showed no significant difference between two groups. However other studies showed similar results²⁷.

CONCLUSION

The laparoscopic approach to hernia repair has clear advantages, including less postoperative pain and shorter convalescence. Therefore, laparoscopic hernia repair has a beneficial role in direct inguinal hernias.

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