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Original Research Article

Comparison of Lichtenstein versus laparoscopic total extra peritoneal method in inguinal hernia surgery: a retrospective study

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ABSTRACT

Background: Inguinal hernias is known to be most common form of abdominal wall hernias and research studies suggested that 3 out of 4 patients of abdominal wall hernias are diagnosed with inguinal hernia. Inguinal hernioplasty is considered to be second most common general surgical operation worldwide and it accounts approximately 15% of all operations. This retrospective study is designed with aim that to compare open Lichtenstein hernia repair and laparoscopic totally extraperitoneal (TEP) hernia repair in patients with inguinal hernias. The result of the study helps to general surgeons to select the better method to treat inguinal hernias.
Methods: This was a retrospective study which was carried out at General Surgery department, Dr. M.K. Shah Medical College and Research Centre, Ahmedabad. Total 100 patients' data were included in the study that has fulfilled inclusion and exclusion criteria of the study.
Results: In present study majority of the patients of both the group are in their 5th decade of their age. It was found that majority of the cases had right side hernia as compare to left side hernia. It was found that mean operative time for bilateral hernia is comparatively higher in Lichtenstein as compared to TEP.
Conclusions: Lichtenstein procedure has less postoperative complications like abdominal distension, seroma and urinary infections. Laparoscopic TEP procedure is having less operative time particularly in bilateral hernia, less postoperative pain, early mobilization and early return to work.

Keywords: Inguinal hernia, Inguinal hernioplasty, Open Lichtenstein hernia repair, Laparoscopic totally extraperitoneal hernia repair

INTRODUCTION

Inguinal hernias is known to be most common form of abdominal wall hernias and research studies suggested that 3 out of 4 patients of abdominal wall hernias are diagnosed with inguinal hernia.[1] Recent research studies reveal that men are having 9 times higher risk of having inguinal hernia as compared to women.[2] Inguinal hernioplasty is considered to be second most common general surgical operation worldwide and it accounts approximately 15% of all operations.[1] Introduction of mesh prosthesis is widely accepted due to decrease in recurrence rate significantly as compared to conventional methods.[3] During the past decade laparoscopic totally extraperitoneal hernia repair (TEP) was also introduced and it is also widely accepted but use of this method is still controversial among the General Surgeons as it possesses rare but severe complications and also required longer duration to perform as compared to open Lichtenstein hernia repair. Early reports comparing laparoscopic and open hernia repair showed that although laparoscopic approach provided some advantages, it took longer to perform. Aeberhard et al investigated the learning curve for TEP repair and found that 80–100

procedures are required for a surgeon to complete the hernioplasty in less than 60 minutes.[4]

This retrospective study is designed with aim that to compare open Lichtenstein hernia repair and laparoscopic TEP hernia repair in patients with inguinal hernias. The result of the study helps to General Surgeons to select the better method to treat inguinal hernias.

METHODS

This was a retrospective study which was carried out at General Surgery department, Dr. M. K. Shah Medical College and Research Centre, Ahmedabad from Sep-2014 to Oct-2015. We have compared open Lichtenstein hernia repair and laparoscopic TEP hernia repair in terms of recurrence rate, less postoperative complications, less hospital stay. Total 100 patients' data were included in the study that has fulfilled inclusion and exclusion criteria of the study. Male and females of age more than 18 years and underwent either of the surgical method (i.e. open Lichtenstein hernia repair and laparoscopic TEP hernia repair). We did not take those patients data that had recurrent hernia and or other form of hernias.

Statistical methods

Student's t-test (independent sample t-test) as a parametrical test was used to find significant mean difference between both the study group. In comparing categorical variables, cross-table statistics were used ($\chi 2$-Fisher's exact test). Significance limit of statistics was set at $p<0.05$.

RESULTS

We have found that majority of the patients in both group were in the fifth decade of their age. 62.00% of the patients in TEP group had hernia in right side and similarly in Lichtenstein group 68.00% had hernia in right side and these results did not found statistically significant. In a Lichtenstein group 92.00% had unilateral hernia in compare to TEP group where 76.00% had unilateral hernia and this result found statistically significant.

Table 1: Patient characteristics.

Variable	Lichtenstein	TEP	P value
Age (years)	54.25±5.89	53.17±5.89	NS
Side (%)			
Right	34 (68.00)	31 (62.00)	NS
Left	16 (12.00)	19 (18.00)	NS
Type of hernia (%)			
Unilateral	46 (92.00)	38 (76.00)	0.0001
Bilateral	4 (08.00)	12 (24.00)	0.0001

We have found that the there was no any significant difference in mean duration of hospital stay between the two groups of patients; mean hospital stay in group TEP was 2.3±0.58 days and whereas in group Lichtenstein mean hospital stay was 2.4±0.47 days and p value 0.345, and as such, was considered to be not quite statistically significant.

Table 2: Comparison of operative time.

Type of hernia	Lichtenstein (in min)	TEP (in min)	P value
Unilateral	59.01±15.81	59.49±19.73	NS
Bilateral	82.65±16.54	70.69±21.42	0.0001
Total	71.35±19.11	62.39±15.96	NS

We compared a mean duration of surgery between the two groups and found no significant differences, except for bilateral hernias, which took significantly more time in the open group (82.65.65±16.54 vs. 70.69±21.42 minutes; p=0.0001).

Table 3: Postoperative complications.

Complication	Lichtenstein	TEP
	N **(%)**	N **(%)**
Pain	2 (04.00)	1 (02.00)
Abdominal distention	0 (00.00)	1 (02.00)
Seroma	1 (02.00)	3 (06.00)
Wound infection	1 (02.00)	2 (04.00)
Urinary infection	1 (02.00)	3 (06.00)
None	45 (90.00)	40 (80.00)

In present study in Lichtenstein group only 10.00% of the patients were experienced postoperative complication which includes 02.00% had urinary infection, wound infection, seroma and 04.00% had pain respectively. Whereas in TEP group total 20.00% of the patients were experienced postoperative complication and out of them 06.00% had urinary infection and seroma respectively, 04.00% had wound infection, 02.00% had abdominal distension and pain respectively. It was found that there was no any recurrence in any of the group.

DISCUSSION

In present study we have taken data of total 100 patients of inguinal hernia and underwent surgical repair the aim of the study was to compare safety and efficacy of open Lichtenstein hernia repair and laparoscopic TEP hernia repair.

In present study majority of the patients of both the group are in their 5th decade of their age which is consistent with Prasad et al study.[5]

In present study it was found that majority of the cases had right side hernia as compare to left side hernia and these results are also consistent with Prasad et al study.[5]

It was found that mean operative time for bilateral hernia is comparatively higher in Lichtenstein as compared to TEP and this study results are consistent with Sawarkar et al study.[6]

In present study we did not found any statistical significant mean hospital stay duration between both the study groups which is consistent with Al-Shemy et al study.[7]

In present study it was found that postoperative complication was less in Lichtenstein group as compared to TEP group and these results are consistent with Al-Shemy et al study.[7]

CONCLUSION

Lichtenstein procedure has less postoperative complications like abdominal distension, seroma and urinary infections. Laparoscopic TEP procedure is having less operative time particularly in bilateral hernia, less postoperative pain, early mobilization and early return to work.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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