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Available online at: http://www.iajps.com ***Research Article***

COMPARISON OF POST-OPERATIVE COMPLICATION BETWEEN LICHTENSTEIN REPAIR AND LAPAROSCOPIC TOTAL EXTRA-PERITONEAL APPROACH FOR INGUINAL HERNIA REPAIR IN CASES OF LIVER CIRRHOSIS

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Abstract:

Objective: *To compare the post-operative complication between lichtenstein repair and laparoscopic total extra-peritoneal approach for inguinal hernia repair in cases of liver cirrhosis*

Material and methods: *This randomized controlled trial was conducted at Department of Surgery Fauji Foundation Hospital Peshawar from July 2018 to December 2018 over the period of 6 months. Total 90 patients with inguinal hernia and liver cirrhosis were selected. Post-operative outcome was compared between the both groups.*

Results: *In present study, total 90 patients were recruited. Mean age of the patients managed with open method was 36.01 years in Lap group was 37.82 years. Out of 90 patients, 80 (89%) were male and 10 (11%) were females. Total 81 (90%) patients found with child pugh class-I and 9 (10%) with child pugh class II and no patients found child pugh class III. Statistically significant difference of post-operative complications between the both groups was observed.*

Conclusion: *Results of present study showed higher number of male patients with liver cirrhosis undergone inguinal hernia repair as compared to female patients. Persisting groin pain and numbness was most common complication in open group as compared to laparoscopic group. Statistically significant lower rate of post-operative complications was observed in laparoscopic group as compared to open group.*

Keywords: *Inguinal hernia, Liver cirrhosis, Lichtenstein repair, Laproscopic TEP repair.*

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INTRODUCTION:

Inguinal hernias and liver disease is not well studied and about 40% cases of inguinal hernias requiring repair. [1] Patients with liver cirrhosis undergoing elective inguinal hernia repair after medical optimization had incidence of postoperative complications and long-term recurrence which is not different from patients without liver cirrhosis. [2,3] Surgical management (laparoscopic or open) of cases of inguinal hernia with cirrhosis of liver is still controversial. Whether laparoscopic inguinal hernia repair is safe and potentially affords superior outcomes in patients with liver disease is unknown. Searching in literature, a single recent study revealed that patients with liver disease operated by laparoscopic inguinal hernia repair had similar morbidity, hospital stay, and recurrence rate compared to those operated by open repairs with a slightly longer operative time suggesting that both approaches are viable repair options. [4] Aim of this study is to assess the outcomes of laparoscopic inguinal hernia repair compared to open procedures regarding postoperative complications and recurrence rate in patients with liver cirrhosis.

MATERIAL AND METHODS:

This randomized controlled trial was conducted at Department of Surgery Fauji Foundation Hospital Peshawar from July 2018 to December 2018 over the period of 6 months. Total 90 patients with inguinal hernia and liver cirrhosis were selected. Study was approved by the ethical committee and written informed consent was taken from every patient. According to department protocol; open technique was the Lichtenstein repair with the use of polypropylene mesh to provide a tension-free repair and Laparoscopic inguinal hernia repair were undertaken with the laparoscopic total extra-peritoneal (TEP) approach. Proline mesh was used for groin repair in all cases with fixation by absorbable tacks.

Data collected included patient demographics, etiology of liver cirrhosis, preoperative Child-Turcotte-Pugh class (CPT) and MELD score, operative procedure type, operation time, postoperative complications, hospital stay and persisting groin pain and numbness and hernia recurrence at follow up. Date was entered in pre-designed proforma along with demographic profile of the patients.

All the collected was entered in SPSS version 18 and analyzed. Mean and SD was calculated for numerical data and frequencies were calculated for categorical data.

RESULTS:

In present study, total 90 patients were recruited. Mean age of the patients managed with open method was 36.01 years in Lap group was 37.82 years. Out of 90 patients, 80 (89%) were male and 10 (11%) were females. (Fig. 1) Total 81 (90%) patients found with child pugh class-I and 9 (10%) with child pugh class II and no patients found child pugh class III. (Fig. 2) Ascites was found in 3 (3.33%) patients. Side of hernia was right side in 80 (88.89%) and left in 10 (11.11%). Total 22 (24.44%) patients were diabetics and obstructive pulmonary disease was found in 10 (11.11%) patients. (Table 1) Wound (or trocar site) hematoma was noted in 3 (6.25%) patients managed with open method and in 2 (4.76%) patients managed with laparoscopic method. Difference was statistically significant with p value 0.03. Wound (or trocar site) seroma was found in 1 (2.08%) patients and 2 (4.76%) patients managed with open method and laparoscopic method but the difference was not statistically significant with p value 0.06. Scrotal edema was noted in 4 (8.33%) patients managed with open method and not patients was found in laparoscopic group. Wound (ports sites) infection was found in 6 (12.5%) patient in open group and in 1 (2.38%) patients managed with laparoscopic method. Difference was statistically significant between the both groups. Acute urinary retention was noted in 3 (6.25%) patients in open group while no patient was found in laparoscopic group. Postoperative ascites were found in 5 (10.4%) patients and 4 (9.52%) respectively in both groups and the difference between the both groups not significant with p value 0.06. Mena hospital stay was 3.56 days and 1.5 days in open group and laparoscopic group respectively. (Table 2)

Fig. 1 Gender distribution

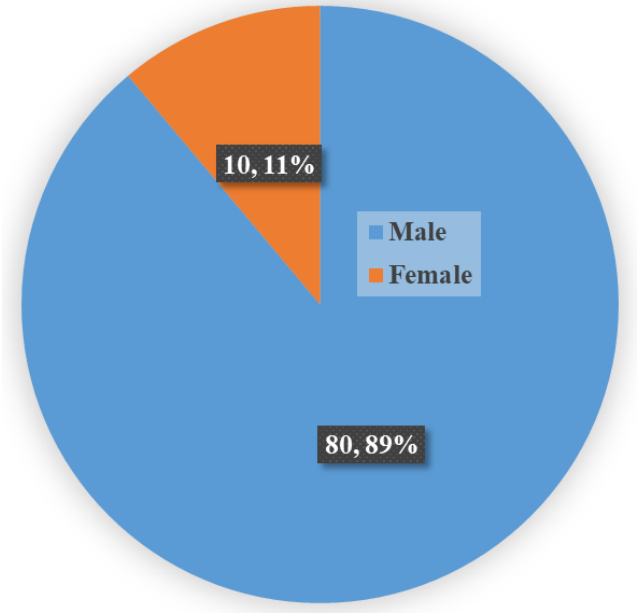

Fig. 2 Distribution according to child pugh class

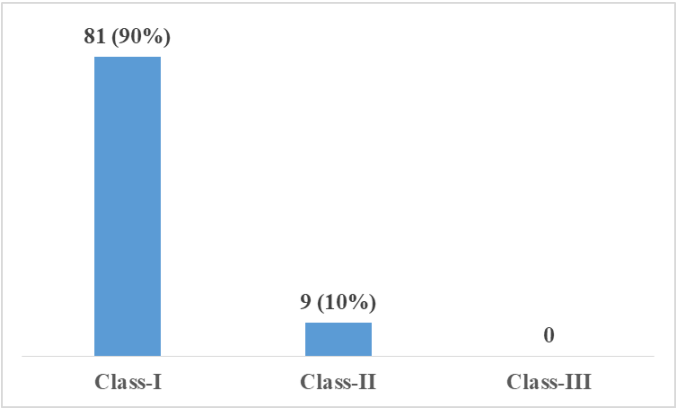

Table 1: Characteristics of patients.

Variable	**N**	**%**
Ascites(n)	3	3.33
Hernia side (n)		
Right	80	88.89
Left	10	11.11
Co morbidity (n)		
Diabetes	22	24.44
Obstructive pulmonary disease	10	11.11

Table 2: Postoperative outcomes.

Variable	**Open (n=48)**	**Lap (n=42)**	**P value**
Operation time (minutes)	45 (30-65)	55 (45-75)	0.02
Postoperative complications	**N (%)**	**N (%)**	
Wound (or trocar site) hematoma	3 (6.25)	2 (4.76)	0.03
Wound (or trocar site) seroma	1 (2.08)	2 (4.76)	0.06
Scrotal edema	4 (8.33)	0 (0)	0.0001
Wound (ports sites) infection	6 (12.5)	1 (2.38)	0.0001
Acute urinary retention	3 (6.25)	0(0)	0.002
Postoperative ascites	5 (10.4)	4 (9.52)	0.06
Hospital stay(mean) days	3.56	1.5	0.001
Recurrence	3 (6.25)	0 (0)	0.002
Persisting groin pain and numbness	22 (33.33)	4 (9.52)	0.0001

DISCUSSION:

Risk for postoperative wound-healing complications in open groin hernia surgery is increased in patients with liver cirrhosis. Risk of hemorrhage or hematoma within 30 days and postoperative wound infection were found to be significantly increased. [5] Also, postoperative morbidity and mortality rates in patients with liver cirrhosis who undergo non-hepatic surgery are greatly depending on severity of the cirrhosis and the type of surgical procedure. Surgery procedure can be safely performed in patients with low MELD scores or CTP class- A without portal hypertension as well as, with the minimally invasive techniques. [[6,7]

The advent laparoscopic approach to inguinal hernia repair is a safe and reliable method with a similar recurrence rate as the open tension-free mesh repair. Advantages involve fewer incidences of wound infection and hematoma, less chronic postoperative pain and numbness and decreased recovery time. [8-11] However, careful attention should be given to the technical details to avoid the incidence of life-threatening complications including intestine, vascular or bladder injury which is more common with laparoscopic manipulations. [12,13]

In this study operation times for laparoscopic repair were longer compared to open mesh methods which are consistent with other studies. [8-12] There were no serious complications. Scrotal edema and wound infection were greater for the patients operated by open technique with a statistically significant difference. Lengths of hospital stay were greater for the patients operated by open technique than that by laparoscopic hernia repair.

Laparoscopic surgery was associated with less long-term numbness and less pain in the groin which is consistent with other studies. [14-15] No recurrence of hernia occurred in the patients operated by laparoscopic inguinal hernia repair in our study on contrary with other studies found hernia recurrence was not different between laparoscopic approach and open mesh repair. [10-12]

The choice between the transabdominal preperitoneal (TAPP) procedure and the totally extraperitoneal (TEP) procedure should be based on surgeon because there is no evidence of superiority between both. [9] According the European Hernia Society guidelines; TEP repair is preferred to a TAPP because it reduces short-term postoperative pain more effectively than TAPP repair and results in shorter hospital stay of primary cases. [10] In contrast, TAPP repair is correlated with the advantage of that the technique is more familiar and much easier and of a shorter surgery

duration. These findings show that shared decision-making regarding both approaches of laparoscopic hernia repair may be needed. [16-18] A totally extraperitoneal approach potentially offers advantage of eliminating complications related to violating the peritoneal cavity to reach the extraperitoneal space which is beneficial in patients with liver cirrhosis which may have minimal or potential ascites.

Although Lichtenstein operation was associated with a shorter operating time however, TEP repair had less wound infections, less chronic neuralgia pain that enabled patients to return to work at a shorter time. There is statistically significant difference in terms of hernia recurrence for TEP repair in our study with follow-up time is less than 3 years. Other studies when follow-up time is more than 3 years, there was no significant difference in recurrence rate compared with Lichtenstein repairs. [19,20] The latter is considered as limitation in our study in addition to it is not a controlled randomized trial, to conclude superiority of laparoscopic inguinal hernia repair compared to open inguinal hernia repair in postoperative outcomes for patients with liver cirrhosis and future research is required.

CONCLUSION:

Results of present study showed higher number of male patients with liver cirrhosis undergone inguinal hernia repair as compared to female patients. Persisting groin pain and numbness was most common complication in open group as compared to laparoscopic group. Statistically significant lower rate of post-operative complications was observed in laparoscopic group as compared to open group.

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