



# LAPROSCOPIC CHOLECYSTECTOMY; EARLY POSTOPERATIVE OUTCOMES OF LAPROSCOPIC CHOLECYSTECTOMY WITH AND WITHOUT SUBHEPATIC DRAIN INSERTION.

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**ABSTRACT... Objectives:** Compare the efficacy in terms of mean pain score and mean duration of hospital stay in patients of symptomatic cholelithiasis undergoing laproscopic cholecystectomy with and without subhepatic drain insertion. **Study Design:** Randomized control trial. **Setting:** Surgical Unit-III of Allied Hospital Faisalabad which is tertiary care unit. **Duration of Study:** 20-02-2013 to 20-08-2013. **Results:** Out of 150 cases (75 cases in two groups), mean+sd was calculated as 44.74+ 6.57 years, 80%(n=60) in Group-A and 82.66%(n=62) in Group-B were female, post-operative hospital stay was recorded which shows 3.16+0.463 in group-a and 2.32+0.569 days in group-b and it shows statistically significant difference between the two groups, similarly, on comparison of post-operative abdominal pain score at 24 hours in both groups 2.266+1.062 in Group-A and 1.8+0.90 in Group-B pain on vas was recorded at 24 hours which shows significantly lower in Group-B patients by calculating p value as 0.002348. **Conclusion:** No subhepatic drain insertion after laproscopic cholecystectomy is better when compared to those with subhepatic drain insertion in terms of mean pain score and mean duration of hospital stay in days post operatively.

**Key words:** Cholelithiasis, Cholyystitis, Laproscopic Cholecystectomy, Subhepatic Drain Insertion.

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## INTRODUCTION

To treat cholelithiasis, laparoscopic cholecystectomy is reported as gold standard. In early era of laparoscopic cholecystectomy, majority of the surgeons were in practice to place the drain in subhepatic space so that post-operative sub-hepatic collections may be drained, however, with the passage time, this practice was omitted.<sup>1</sup> Now, it is assumed that placing sub-hepatic drain after laparoscopic cholecystectomy is not necessary rather it is responsible for a higher post-operative complications than those without placing drain.<sup>2</sup>

It is revealed that peritoneum absorbs effectively small amount of fluids after laparoscopic cholecystectomy whereas leaking of large amount of fluid is uncommon, however, if some cases are found with large amount of leaking, the use of drain is not ineffective due to its blockage by blood clot or omental plug.<sup>3</sup> In

addition, sub-hepatic drains are responsible for various complications including converting sterile collection in infected,<sup>4</sup> increasing hospital stay and post-operative pain.<sup>5,6</sup>

Some of the recent systematic reviews revealed no advantage of placing intra-abdominal drains<sup>7,8,9</sup> rather increases postoperative hospital stay i.e. 2.1+1.282 days in cases without drain and 3.58+0.73 days in cases with drains.<sup>3</sup> Further, post-operative abdominal pain is also significantly higher in cases with drain than those of without drain after 24 hrs of the procedure.<sup>2</sup> Unfortunately, still various surgeons place the drain and consider it a safe option.

Insertion of sub-hepatic drains after laparoscopic cholecystectomy is a routine practice in local surgeons. However, our results based local study is helpful to decrease sufferings of patients undergoing laproscopic cholecystectomy by

decreasing their postoperative pain and duration of hospital stay.

## METHODOLOGY

This randomized control trial included 150 cases (75 cases in two groups), by using who sample size calculator for two mean, anticipated population mean =  $1.3^2$  Test value of population mean =  $0.85^2$  Pooled standard deviation = 0.98, Power of study = 80%, Level of significance = 5%, Sample size = 150 (75 in each group), we used non probability consecutive sampling technique, either sex of the patients and age range 20 to 60 years with symptomatic cholelithiasis, acute and chronic cholecystitis were included in the study, whereas those cases with common bile duct stones, carcinoma of gall bladder, severe cardiopulmonary disease, pregnant females, patients with prothrombin time greater than 18, Laproscopic cholecystectomy converted to open cholecystectomy and those cases admitted after 72 hours and before 8 weeks of onset of attack of acute cholecystitis were excluded from the study.

The cases were admitted through outdoor basis along with permission from hospital ethical committee. Risks, benefits of the procedure were explained to the participants and informed written consent was also obtained. Randomization of the patients was on the basis of computer generated random number table. Group-A cases were those with subhepatic drain insertion and Group-B was allotted to the cases without sub-hepatic drain insertion after laparoscopic cholecystectomy.

General anesthesia was administered in all cases. All the cases received single dose of prophylactic I/V antibiotic 1 hour before induction of general anesthesia. After induction of anesthesia they were placed in supine position with 20 degree right tilt and head up position. Operative field was cleaned with povidone iodine solution. Pneumoperitoneum was created by open method through umbilicus. Intra abdominal pressure was maintained between 12-14 mmHg. Four ports were inserted. Dissection was started at calot's triangle. After identification of cystic duct and artery, clips were applied to both the structures and excised. After excision of cystic duct and

artery, gall bladder was dissected from liver. Gall bladder was delivered through supra-umbilical port. Subhepatic drain was placed in group A. All ports were removed. Carbondioxide used for pneumopertoneum were completely removed. Port sites were stitched with silk number 2/0. at 24 hours of surgery intensity of pain in both groups were measured by visual analogue pain scoring system and for postoperative pain relief, same type of analgesia (injection diclofenac sodium) was given to all patients by same route (intramuscular) and equal dose (50 mg per dose). Laproscopic cholecystectomy was performed under the supervision of a consultant surgeon. Postoperative pain score at 24 hours and mean duration of hospital stay was noted. SPSS (16) was used for data analysis. Comparison was done for postoperative pain and hospital stay by using t-test, p value 0.005 was considered as significant.

## RESULTS

Age distribution of the patients was done which shows that majority of the patients in both groups were between 41-50 years i.e. 57.33%(n=43) in Group-A and 66.64%(n=50) in Group-B, followed by 24%(n=18) in Group-A and 20%(n=15) in Group-B were between 51-60 years, 13.33%(n=10) in Group-A and 9.34%(n=7) in Group-B were between 31-40 years while only 5.34%(n=4)in Group-A and 4%(n=3) in Group-B were between 21-30 years age group, mean+sd was calculated as 44.74 + 6. 57 years. (Table-I)

Gender distribution of the patients was done which shows 20% (n=15) in Group-A and 17.34% (n=13) in Group-B were male and 80% (n=60) in Group-A and 82.66% (n=62) in Group-B were female. (Table-II)

Post operative hospital stay was calculated which shows 3.16+0.463 in Group-A and 2.32+.569 days in Group-B, p value was calculated as 0.00001 which is statistically significant. (Table-III)

We compared post operative abdominal pain score at 24 hours in both groups which shows 2.266+1.062 in Group-A and 1.8+0.90 in Group-B, p value was calculated as 0.0023 which

is statistically significant. (Table-IV)

Age (in Years)	Group-A (n=75)		Group-B (n=75)	
	No. of Patients	%	No. of Patients	%
21-30	4	5.34	3	4
31-40	10	13.33	7	9.34
41-50	43	57.33	50	66.64
51-60	18	24	15	20
Total	75	100	75	100

**Table-I. Age distribution (n=150)**  
Mean+SD: 44.74+6.57

Gender	Group-A (n=75)		Group-B (n=75)	
	No. of Patients	%	No. of Patients	%
Male	15	20	13	17.34
Female	60	80	62	82.66
Total	75	100	75	100

**Table-II. Gender distribution (n=150)**

Post Operative Hospital Stay	Group-A (n=75)	Group-B (n=75)
	3.16+0.463	2.32+0.569

**Table-III. Comparison of postoperative hospital stay in days (n=150)**  
P value=0.00001

Post-Operative Pain Score	Group-A (n=75)	Group-B (n=75)
	2.266 + 1.062	1.8+ 0.90

**Table-IV. Comparison of postoperative pain abdomen by vas system at 24 hours (n=150)**  
P value= 0.00234

## DISCUSSION

It is hypothesized that “No Subhepatic drain insertion after laproscopic cholecystectomy is better as compared to subhepatic drain insertion in terms of mean pain score and mean duration of hospital stay in days post operatively” however, to prove this hypothesis we planned this study as routine subhepatic drain insertion after laproscopic cholecystectomies is in common practice locally inspite of the fact that recent guidelines are not in its favour, so the results of the study may help us to decrease sufferings of patients undergoing laproscopic cholecystectomy by decreasing their postoperative pain and duration of hospital stay.

In our study, mean+sd was calculated as 44.74 + 6.57 years, 80%(n=60) in Group-A and 82.66%(n=62) in Group-B were female, post operative hospital stay was recorded which shows

3.16+0.463 in Group-A and 2.32+0.569 days in Group-B and it shows statistically significant difference between the two groups, similarly, on comparison of post operative abdominal pain score at 24 hours in both groups 2.26+1.062 in Group-A and 1.8+0.90 in Group-B pain on VAS was recorded which shows significantly lower in Group-B patients by calculated p value as 0.00234.

The findings of the current study are in agreement with other studies which demonstrate that subhepatic drains after laproscopic cholecystectomy are now considered a source of increased postoperative morbidity such as the mean postoperative hospital stay of the patients without drain is 2.1+ 1.282 days, in contrast to 3.58+0.731 days for the patients in whom the drain is placed<sup>3</sup> while regarding pain score in patients with subhepatic drain insertion is more (1.3+1.17) as compared to patients with out subhepatic drain insertion (0.85+ 0.74) at 24 hours postoperatively.<sup>2</sup>

Hawasli A and colleagues<sup>10</sup> revealed remarkable feature of omitting the drain i.e. reduction of hospital stay, which is the main advantage of laproscopic cholecystectomy, due to early recovery and reduced post-operative pain, which caused cost effective.

Another study conducted by Rathi PK<sup>11</sup> at Department of Surgery, Liaquat University of Medical and Health Sciences, Jamshoro, from January 2009 to December 2009 recorded that the use of drain is associated with significant drain site discomfort/pain and revealed that placement of drain prolongs post-operative hospital stay and responsible for drain site discomfort/pain.

Tzovaras G et al<sup>12</sup> and Uchiyama K and co-workers<sup>13</sup> in their respective studies observed that the use of drain is associated with significant pain and discomfort.

Another study by Julio As. Diez and colleagues<sup>14</sup> rationalized that the use of intraperitoneal drainage after cholecystectomy is responsible for higher incidence of post-operative fever and

wound infection. However, the use of drain has a greater risk of discomfort and postoperative.

However, still the placement of a drain in subhepatic area after routine laproscopic cholecystectomy by many surgeons seems to be of no use and it should be avoided to control the post operative pain and hospital stay.

## CONCLUSION



The results of the study reveal that no subhepatic drain insertion after routine laproscopic cholecystectomy is better as compared to subhepatic drain insertion in terms of mean pain score and mean duration of hospital stay in days post operatively.

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## AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Muhammad Usman	Principal author, Maun idea, data analysis, result, compilation.	
2	Kaiser Saleem	Critical review of manuscript.	
3	Saddaqt Hayat	Referance collection.	