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Research Article

COMPARISON OF DEGREE OF POSTSURGICAL PAIN AMONG PATIENTS WITH ROUTINE DRAINAGE AND WITHOUT DRAINAGE AFTER APPLICATION OF UNCOMPLICATED ELECTIVE LAPAROSCOPIC CHOLECYSTECTOMY

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Abstract:

Objective: The placement of sub-hepatic drainage after the application of Laparoscopic Cholecystectomy (LC). This drainage is also considered to influence the postsurgical pain, infections, and sub-hepatic collections. This research work aimed to provide a comparison of the average pain scores in the patients with sub-hepatic drainage and patients without drainage after surgical intervention of uncomplicated elective laparoscopic Cholecystectomy.

Methodology: This research work was completed in the duration of six months from June 2019 to November of 2019. This study was conducted in CMH Lahore. The ethical committee of the hospital permitted to conduct this research work. We took written consent from every patient after describing them the purpose of this research work. The calculation of the samples carried out with the WHO calculator, and we used random sampling to separate the 170 patients who were undergoing Laparoscopic Cholecystectomy into two groups. The patients of one group were present with sub-hepatic drainage, and patients of another group were without it. The evaluation of the degree of the postsurgical pain carried out by the VAS (Visual Analogue Scale) by duty doctor at 24 hours. The collection and analysis of the data carried out with the application of the Chi-square test and P-value of less than 0.050 were considered as significant.

Results: The findings of this research work shows that the severity of the postsurgical pain in the groups of the patients with routine drainage is higher as compared to the group of the patients without drainage after the application of the uncomplicated elective Laparoscopic Cholecystectomy.

Conclusion: It is essential to avoid the placement of the sub-hepatic drain in elective uncomplicated Laparoscopic Cholecystectomy to decrease the after-surgical pain.

KEYWORDS: Laparoscopic Cholecystectomy, Severity, Postsurgical, Visual Analogue Scale, Asymptomatic, Hepatic, Elective, Drainage.

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INTRODUCTION:

Cholelithiasis is among the common issues of the general public, and 2.0% to 3.0% of asymptomatic patients change their status to symptomatic every year [1]. Laparoscopic Cholecystectomy was familiarized as a substitute to traditional removal of open gallbladder by Mouret in the year 1987, and very soon, it became the ideal standard for the surgical therapy of the cholelithiasis [2, 3]. The role of sub-hepatic drainage after laparoscopic Cholecystectomy is still an issue of discussion [4, 5]. Adrain inserted in the intra-abdominal cavity as a first warning system may not always identify a nearby collection of fluid, and it also poses the risk of the physical injury. This drainage also provides the entry location for the micro-organisms and severe pain at the time of removal [6]. The sub-hepatic drain is a much constant source of pain and irritation for the patients. The primary purpose of the drainage of the sub-hepatic site after gall bladder removal is to prevent the bile collection or the accumulation of the blood that can get an infection. Then they may be a requirement of interventional treatment, either by surgical intervention or utilization of the imaging.

In a research work conducted by Shamim M, postsurgical pain was 18.98% in the group of patients present with drain and 5.65% in the patients present without drainage [7]. One other research work stated that the rate of morbidity was much low in the group of patients without drainage. Some additional research works were not able to detect any significant difference in both groups of patients [8]. The main objective of this research work was to evaluate the severity of postsurgical pain in the patients present with drainage and its comparison with the patients without drainage. It will guide us to reduce the severity of postsurgical pain if the reason seems to be the sub-hepatic drainage.

MATERIAL AND METHODS:

This research work was conducted in CMH Lahore, in the duration of 6 months from June 2019 to November of 2019. The calculation of the samples carried out with the utilization of the WHO calculator. There were 170 patients with 85 in each group. The significance level was 5.0%, and test power was 80.0% with anticipated P-1 and P-2 at 18.99 & 5.66 correspondingly. All the patients who were undergoing elective laparoscopic Cholecystectomy from both genders were the participants of this research work. The range of the age of the patients was from 30 to 55 years. All the patients who underwent conversion to Cholecystectomy needed critical care, and immune-compromised were not included in this research study. This study also included the patients present with neuralgias and with other complications as

hemorrhage after surgery or biliary leakage. We took written consent from all the patients after explaining to them the purpose of this research work. The ethical committee of the hospital permitted to conduct this research work. Characteristics of demography as age, sex, and address were recorded as well as registered phone numbers for follow-up. We applied the consecutive non-probability technique of sampling, and all the patients who were undergoing elective laparoscopic Cholecystectomy fulfilling the inclusion criteria were allocated randomly to Group-1 or Group-2.

Sub-hepatic drainage was inserted in the patients of Group-1 during surgery, and Group-2 was present without sub-hepatic drainage. The evaluation of the degree of postsurgical pain carried out by the VAS (Visual Analog Scale) by duty doctor after 24 hours in the patients of both groups. Patients present with the developments of complications like a hematoma or biliary leak were not the participants of this research work. Information was collected on separate forms. SPSS V.20 was in use for the entry and statistical analysis of the collected data. We applied the descriptive statistics for the calculation of quantitative as well as qualitative variables. The measurement of the qualitative variables carried out in frequency. The analysis of the quantitative variable as the severity of pain carried out with the utilization of the Visual Analogue Scale. The application of the Chi-square test carried out for the comparison of the pain frequency in both groups. P-value of less than 0.050 was significant statistically. Stratification was used for the control of effect modifiers like age, gender.

RESULTS:

The distribution of the age for the patients carried out describing that 26 (15.29%) patients were in the age group of 30 to 35 years, 32 (18.82%) patients were in the age group of 36-40 years, 18 (10.58%) patients were in the age group of 41-45 years, 38 (22.35%) patients were 46-50 years of age, and 56 (32.94%) patients were present in the age group of 51-55 years. The average age of the patients was 46.0 ± 7.65 years for patients of Group-1 and 47.0 ± 7.63 years for the subjects of Group-2. The distribution of the patients also carried out in accordance with gender, which shows that 36 (21.17%) patients were from the male gender, and 134 were females.

In the Group-1, there were 66 (38.82%) females and 19 (11.17%) males. In the Group-2, there were 68 (39.41%) females and 17 (10.0%) male patients. The rate of occurrence of the significant score of pain in the patients of Group-1 was 21.17% (n: 18), and this frequency of significant score of Pain in Group-2 was 5.88% (n: 5). The combined rate of

occurrence of the considerable scores of pains in the patients of both groups was 13.52% (n: 23),

with a P-value of 0.00350.

Table-I: Frequencies of Post-Operative Pain (n=170)

Post-operative Pain	Group A	Group B	Total	P-value
Yes	18 (21.17%)	5 (5.88%)	23 (13.52%)	0.0035
No	67 (78.82%)	80 (94.11%)	147 (86.47%)	-
Total	85 (100%)	85 (100%)	170 (100%)	

DISCUSSION:

Cholelithiasis is a severe issue in the population of countries of the west and in the region of South Asia. This complication is also common in our region. The traditional way for the treatment of this health issue is open Cholecystectomy. Sub-hepatic drainage after this surgical intervention is a trend. The insertion of the subhepatic drainage carried out to drain the bile, blood, and serous fluid from this particular space, and it is an early system of warning for the identification of surgical complications like the collection of blood or biliary leakage. In research work conducted by Antoniou S, there were very high scores of pain in the group of patients with drainage both at 6 and 12 hours (Average difference 1.120, 95.0% CI (Confidence Interval) 1.010-1.240, $P < 0.00010$) and at 12 to 24 hours after surgical intervention (average difference 1.120, 95.0% CI 0.860-1.390, $P < 0.00010$). This particular finding is consistent with the results of this current research work, where significant pain was much high in the patients of drainage group ($P = 0.00350$) [9]. There is consideration about subhepatic drainage that it has an association with the increase in infection, subhepatic collection, and pain [10, 11].

Laparoscopic Cholecystectomy has become the replacement of the conventional Cholecystectomy recently, and it is the gold standard for the treatment of this complication now [12, 13]. However, there is much-limited information about the prophylactic subhepatic drainage value for elective laparoscopic Cholecystectomy. The most critical concern for the patients who are to undergo laparoscopic Cholecystectomy is Pain [14, 15]. There are variable findings of the research works conducted to confirm these distinct differences. This current research work carried out to find the rate of occurrence of pain scores in the patients present in the group of drainage in comparison with the patients present without drainage after the surgical application of laparoscopic Cholecystectomy.

This current research work shows that 36 (21.17%) patients were male, whereas 134 (78.82%) patients were females. The rate of significant scores of pains in the patients of Group-1 was 21.17% (18), and in the patients of Group-2 was 5.88% (5). The

rate of occurrence of scores of pains in the patients of both groups combined 23 (13.52%). P-value was 0.00350, showing significant difference statistically. The pain in the patients of drainage group was significantly high after the complete observance of 24 hours. The findings of this current research work are similar to the results of the research study conducted by Shamim M, which was published in an Indian journal of surgery. According to that particular research study, a significant score of pain was 18.99% in the patients of the drain group, which is comparable to our findings of 21.17% in the patients of the drain group. In comparison, their results for significant scores of pains were 5.65%, much close to our 5.880% in the patients of the non-drain group.

Findings of most of the research work performed in various regions of the world in the establishment of the role of subhepatic drainage in patients undergoing laparoscopic Cholecystectomy discovered that it has an association with the high pain after surgical intervention, increased uneasiness, as well as increased total, stay in the hospital for the patients [16]. The primary aim of laparoscopic Cholecystectomy is to reduce the pain of the patients, duration of stay in the hospital and permits the patients a quick and smooth recovery from this surgery. Subhepatic drainage is a source of severe pain, and this pain restricts the main primary focus of the laparoscopic Cholecystectomy, which is to have fat and recovery without any complication [17]. There should be avoidance in the insertion of the subhepatic drainage after laparoscopic Cholecystectomy for better and fast recovery of the patients with less pain [18]. There are some limitations of this research work as we did not follow up on our patients for long duration in terms of pain and other complications for long runs like adhesions, hernias at the port site, and obstruction of intestines. This research work was single-center research and targeted the patients of a specific region, so it is not possible to generalize the findings of this research work on the whole nation.

CONCLUSION:

The findings of this research work were much consistent with many other research works on this very subject. The results of this research work

concluded that the rate of occurrence of postsurgical pain in a group of routine drainage after the application of elective laparoscopic Cholecystectomy was high as compared to the non-drainage group. It is essential to avoid the placement of sub-hepatic drain after elective laparoscopic Cholecystectomy to decrease the postsurgical pain. However, postsurgical complications like hematoma, sub-hepatic abscess, and bilioma may change the outcome.

REFERENCES:

1. Portincasa P, Moschetta A, Palasciano G. Cholesterol gallstone disease. *Lancet*. 2006;368(9531):230-239. doi: 10.1016/S0140-6736(06)69044-2.
2. Poupon R, Rosmorduc O, Boelle PY, Chretien Y, Corpechot C, Chazouilleres O, et al. Genotype-phenotype relationships in the low-phospholipid associated cholelithiasis syndrome. A study of 156 consecutive patients. *Hepatology*. 2013. doi: 10.1002/hep.26424.
3. Halldestam I, Kullman E, Borch K. Incidence of and potential risk factors for gallstone disease in a general population sample. *Br J Surg*. 2009;96(11):1315-1322. doi: 10.1002/bjs.6687.
4. Shamim M. Routine Sub-Hepatic Drainage after Laparoscopic Cholecystectomy: Open, Randomized, Clinical Trial. *Indian J Surg*. 2013;75(1):22-27. doi: 10.1007/s12262-012-0452-5.
5. Shaffer EA. Epidemiology and risk factors for gallstone disease: has the paradigm changed in the 21st century. *CurrGastroenterol Rep*. 2005;7(2):132-140. doi: 10.1007/s11894-005-0051-8.
6. Antoniou S, Koch O, Antoniou G, Kohler G, Chalkiadakis G, Pointner R, et al. Routine versus no drain placement after elective laparoscopic Cholecystectomy: Metaanalysis of randomized controlled trials. *Minerva Chir*. 2014;69(3):185-194.
7. Ishikawa K, Matsumata T, Kishihara F, Fukuyama Y, Masuda H, Kitano S. Laparoscopic cholecystectomy with and without abdominal prophylactic drainage. *Dig Endosc*. 2011;23(2):153-156. doi: 10.1111/j.1443-1661.2010.01068.x.
8. Picchio M, De Angelis F, Zazza S, Di Filippo A, Mancini R, Pattaro G, et al. Drain after elective laparoscopic Cholecystectomy. A randomized multicentre controlled trial. *SurgEndosc*. 2012;26(10):2817-2822. doi: 10.1007/s00464-012-2252-1.
9. Wang HH, Liu M, Clegg DJ, Portincasa P, Wang DQ. New insights into the molecular mechanisms underlying effects of estrogen on cholesterol gallstone formation. *BiochimBiophysActa*. 2009;1791(11):1037-1047. doi: 10.1016/j.bbali.2009.06.006.
10. Julliard O, Hauters P, Possoz J, Malvaux P, Landenne J, Gherardi D. Incisional hernia after single-incision laparoscopic Cholecystectomy: Incidence and predictive factors. *SurgEndosc*. 2016. doi: 10.1007/s00464-016-4790-4.
11. Heuman DM, Moore EL, Vlahcevic ZR. Pathogenesis and dissolution of gallstones. Zakim D, Boyer TD, eds. *Hepatology: A Textbook of Liver Disease*. 3rd ed. Philadelphia, Pa: WB Saunders. 1996:376-417. doi: 10.5937/mckg47-5179.
12. Demehri FR, Alam HB. Evidence-based management of common gallstone-related emergencies. *J Intensive Care Med*. 2016;31(1):3-13. doi: 10.1177/0885066614554192.
13. Ghazal AH, Sorour MA, El-Riwini M, El-Bahrawy H. Single-step treatment of gall bladder and bile duct stones: A combined endoscopic-laparoscopic technique. *Int J Surg*. 2009;7(4):338-346. doi: 10.1016/j.ijssu.2009.05.005.
14. Gilani SN, Bass G, Leader F, Walsh TN. Collins' sign: validation of a clinical sign in cholelithiasis. *Ir J Med Sci*. 2009 Aug 14. doi: 10.1007/s11845-009-0404-7
15. Binenbaum SJ, Teixeira JA, Forrester GJ, Harvey EJ, Afthinos J, Kim GJ, et al. Single-incision laparoscopic cholecystectomy using a flexible endoscope. *Arch Surg*. 2009;144(8):734-738. doi: 10.1001/archsurg.2009.129.
16. Zaliekas J, Munson JL. Complications of gallstones: the Mirizzi syndrome, gallstone ileus, gallstone pancreatitis, complications of "lost" gallstones. *SurgClin North Am*. 2008;88(6):1345-1368. doi: 10.1016/j.suc.2008.07.011.
17. Dauer M, Lammert F. Mandatory and optional function tests for biliary disorders. *Best Pract Res ClinGastroenterol*. 2009;23(3):441-451. doi: 10.1016/j.bpg.2009.04.001.
18. Stogryn S, Metcalfe J, Vergis A, Hardy K. Does ultrasonography predict intraoperative findings at Cholecystectomy. An institutional review. *Can J Surg*. 2016;59(1):12-18.