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Study the Post Operative Abdominal Complications in Cholecystectomy Patients

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ABSTRACT

Cholelithiasis is the most common biliary pathology worldwide but out of these Only 1-2% asymptomatic patients will develop symptoms requiring surgical intervention; yet cholecystectomy is one of the most common operations performed by General Surgeons. The belief that surgical drainages serve as an early warning of bile leakage, impending bile peritonitis or intra-abdominal haemorrhage is nowadays in dispute. Thus, the lack of bile from a drain cannot be interpreted as indicating the absence of bile leakage or the absence of impending bile peritonitis. The present prospective study entitled ''To study the post operative abdominal complications in cholecystectomy patients'' is to be conducted on 200 patients admitted for elective Cholecystectomy in the department of surgery, J.A. Group of hospitals and G.R. Medical College, Gwalior (MP) during 2015-2016. 200 patients who diagnosed as a case of cholelithiasis, admitted and giving consent for Cholecystectomy will be included in the study. Gallstone with any other associated intraoperative finding like ascites, tuberculosis, suspected mass, Gall bladder carcinoma with gall stones, Cholelithiasis with intraoperative suspicion of choledocholithiasis, Incidental cholecystectomies with other procedures these are excluded. most common post-operative complications are wound infection, pain, biliary peritonitis, subhepatic collection and abscess. Patients in drain group had more pain compared to without drain group. Patients had more pain after open cholecystectomy (OC) as compare to laparoscopic Cholecystectomy. Wound infection was noted in 14(7%) patients in the drain group and 2(1%) patients without drain group in elective cholecystectomy. Wound infection was noted in15(15.78%) in open cholecystectomy (OC) and 1 (0.95%) in laparoscopic cholecystectomy. Mean subhepatic collection noted in patients with drain on1st day was 26.3±12.7 mL and on 3rd day was 37.85±12.65 ml and on 7th day was 22.83±9.88 mL. Mean subhepatic collection in patients without drain on 1st day was 20±7.84 mL and on 3rd day was 24±9.34 mL and on 7th day 15.35±7.48 mL. None of the patients required any intervention and were managed conservatively. Mean hospital stay in patients with drain was 8.38±1.86 days and patients without drain was 4.68±1.25 days. Majority of patients with drain group stayed longer time period compared to drain group. Hospital stays also increase after open cholecystectomy (OC) as compare to laparoscopic cholecystectomy. most common post-operative complications are wound infection, pain, biliary peritonitis, subhepatic collection and abscess. Patients in "without drain" group have noted lesser post operative pain, lesser subhepatic collection and shorter hospital stay and less wound infection in elective Cholecystectomy compare to "with drain" group. There is more wound infection noted in open cholecystectomy (OC) as compare to laparoscopic Cholecystectomy. There is no significant difference as far as post operative wound infection in elective laparoscopic Cholecystectomy with drain or without drain. Therefore, in patients undergoing elective Laparoscopic cholecystectomy keeping drain can be avoided as it does not provide any additional benefit.

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Key Words
Open cholecystectomy, wound infection, cholelithiasis

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INTRODUCTION

Cholelithiasis is the most common biliary pathology worldwide but out of these Only 1-2% asymptomatic patients will develop symptoms requiring surgical intervention; yet cholecystectomy is one of the most common operations performed by General Surgeons. This is a common digestive disorder worldwide, with occurrence varying from 6-20%. The highest incidence is seen in Sweden, where 50% of the people have gallstones by the age of 70 years[1].

First successful removal of gallbladder was done by Carl Langenbuch in 1882 for stone disease[2]. Attempts at laparoscopic cholecystectomy (LC) were started in the early 1980s and although the first documented Laparoscopic cholecystectomy was performed by Erich Muhe in Germany in1985, number of workers credit Philip Mouret from France as pioneer of first human laparoscopic cholecystectomy[3].

Drainage in open cholecystectomy (OC) is a matter of considerable debate. Surgeons use drains primarily to prevent sub hepatic abscess or bile peritonitis from an undrained bile leak. However recent reports have shown there is no benefit of drainage after elective cholecystectomy[4,5]. The drain itself may cause minimal pain at drains site and more during its removal[6].

The major reason for drainage of the subhepatic space after cholecystectomy is the fear of bile leakage in gallbladder fossa that may lead to bile peritonitis. This is usually due to an aberrant bile duct and not slippage of the cystic duct ligature. The belief that surgical drainages serve as an early warning of bile leakage, impending bile peritonitis or intra-abdominal haemorrhage is nowadays in dispute. Thus the lack of bile from a drain cannot be interpreted as indicating the absence of bile leakage or the absence of impending bile peritonitis[7,8].

Hospital stay has also prolonged as none of the patient can be discharged on same day. Some studies has demonstrated that infection rate and reoperation rate were not significantly different irrespective of drain were put or not. Also, some studies showed that post laparoscopic cholecystectomy pain was not statistically different between drain and no drain group.

So, present study is planned with the aim 'To study the post operative abdominal complications in cholecystectomy patients'.

Aims and objectives: The present prospective study entitled ''To study the post operative abdominal complications in cholecystectomy patients'' is to be conducted on 200 patients admitted for elective Cholecystectomy in the department of surgery, J.A. Group of hospitals and G.R. Medical College, Gwalior (MP) during 2015-2016.

MATERIAL AND METHODS

Source of data: Patients admitted as in patients for elective Cholecystectomy in whole of Department of surgery, J.A. Group of Hospitals G.R. MedicaCollege, Gwalior (MP).

Duration of study: The period of study will be 12 months from December 2015 to November 2016.

Type of study: Prospective study

Sample size: Two Hundred patients who diagnosed as a case of cholelithiasis, admitted and giving consent for Cholecystectomy will be included in the study.

Inclusion criteria: All patients who diagnosed as case of cholelithiasis, admitted and giving consent for Cholecystectomy will be included in the study.

Exclusion criteria:

- Gallstone with any other associated intraoperative finding like ascites, tuberculosis, suspected mass.
- Gall bladder carcinoma with gall stones
- Cholelithiasis with intraoperative suspicion of choledocholithiasis
- Incidental cholecystectomies with other procedures

Method of collection of data:

- Different cholecystectomies done by different surgeons in the department and drain placement was their personal preference
- The surgeries performed are both open and laparoscopic cholecystectomy
- Each case will be analysed with respect to post-operative abdominal complications like wound infection, biliary peritonitis, subhepatic collection / abscess, postoperative pain and hospital stay
- Subhepatic collection is measured by ultrasonography abdomen in cases of elective cholecystectomy in without drain group and subhepatic collection is measured by ultrasonography abdomen plus collection in drainage beg in cases of elective cholecystectomy with drain group

RESULTS

A total number of 200 patients who underwent elective cholecystectomy in Department of Surgery, G R Medical College and J A Group of Hospitals, Gwalior were included in this study from December 2015 to November 2016. These cases were randomly divided into drain and without drain group. Following results were obtained by use of SPSS 23.0 (Table 1).

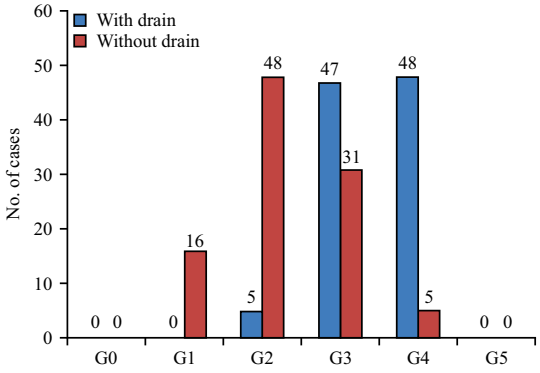

Fig. 1: Post operative pain

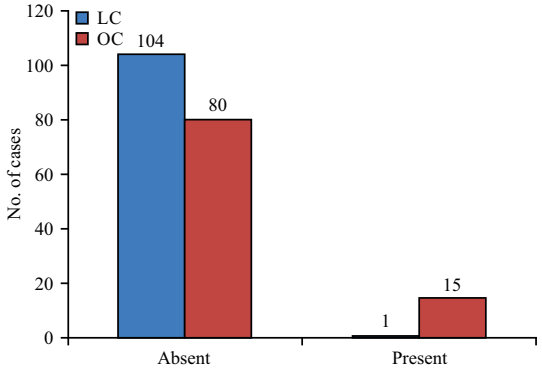

Fig. 2: Wound infection in cholecystectomy

Table 1 : Post operative pain

	With drain		Without drain		Total	
Pain	No.	%	No.	%	No.	%
G_0 almost pain free	0	0	0	0	0	00
G_1 slight pain	0	00	16	16	16	08
G_2 average pain	05	05	48	48	53	26.5
G_3 more than average pain	47	47	31	31	78	39
G_4 moderate pain	48	48	05	05	53	26.5
G_5 severe pain	0	0	0	0	0	00

p-value = 0.000

Table 2: Post operative pain (day 1)

	With drain		Without drain		Total	
Pain	No.	%	No.	%	No.	%
G_0	0	0	0	0	0	0
G_1	0	0	15	15	15	7.5
G_2	2	2	44	44	46	23
G_3	2	2	25	25	27	13.5
G_4	0	0	3	3	3	1.5
G_5	0	0	0	0	0	0

In this study VAS, median grade in patients with drain was G4 (48%), followed by G3 (47%) then G2 (5%). VAS median grade in without drain group was G2 (48%) followed by G3 (31%) then G1 (16%). The p<0.001, there was statistically significant difference observed between the two study groups (Table 2 and Fig. 1).

In this study VAS grade in patients with drain was G2 (2%) and G3 (2%). VAS grade in without drain group was G2 (44%) followed by G3 (25%) then G1 (15%) then G4 (3%) (Table 3).

In this study VAS grade in patients with drain was G3 (19%), G4 (8%) then G2 (2%). VAS grade in without drain group was G2 (3%) and G3 (3%) (Table 4).

In this study VAS grade in patients with drain was G4 (26%), G3 (17%). VAS grade in without drain group was G3 (3%) (Table 5).

In this study VAS grade in patients with drain was G4 (13%), G3 (8%). VAS grade in without drain group was G4 (4%) (Table 6).

In the present study wound infection was noted in 15 (7.5%) in open c and 1 (0.5%) in LC hence p<0.001 There was statistically significant difference noted between the two study groups (Fig. 2, Table 7).

Table 3: Post operative pain (day 3)

	With drain		Without drain		Total	
Pain	No.	%	No.	%	No.	%
G_0	0	0	0	0	0	0
G_1	0	0	0	0	0	0
G_2	2	2	3	3	5	2.5
G_3	19	19	3	3	22	11
G_4	8	8	0	0	8	4
G_5	0	0	0	0	0	0

Table 4: Post operative pain (day 5)

	With drain		Without drain		Total	
Pain	No.	%	No.	%	No.	%
G_0	0	0	0	0	0	0
G_1	0	0	0	0	0	0
G_2	0	0	0	0	0	0
G_3	17	17	3	3	20	10
G_4	26	26	0	0	26	13
G_5	0	0	0	0	0	0

Table 5: Post operative pain (day 7)

	With drain		Without drain		Total	
Pain	No.	%	No.	%	No.	%
G_0	0	0	0	0	0	
G_1	0	0	0	0	0	
G_2	1	1	0	0	1	0.5
G_3	8	8	0	0	8	4
G_4	13	13	4	4	17	8.5
G_5	0	0	0	0	0	0

Table 6: Wound infection in cholecystectomy

	Cholecystectomy		
Wound infection	LC	OC	Total
Absent	104	80	184
Present	1	15	16
Total	105	95	200

In the presents study wound infection is noted in 14 (7%) with drain and 2 (1%) in without drain group hence p-value is 0.007 so there was Statistically significant difference noted between the two study groups.

In the present study mean subhepatic collection noted in patients with drain on 1st day was 26.3±12.7 mL and on 3rd day was 37.85±12.65 mL and on 7th day was 22.83±9.88 mL. Mean subhepatic collection in patients without drain on 1st day was 20±7.84 mL and on 3rd day was 24±9.34 mL and on 7th

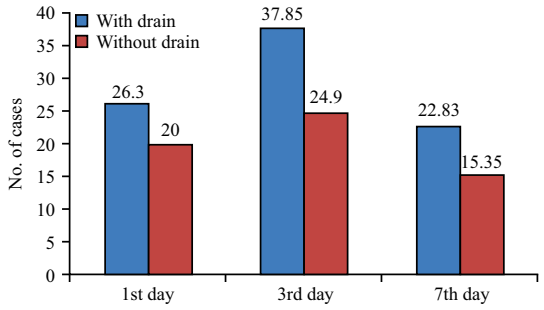

Fig. 3: Sub hepatic collection

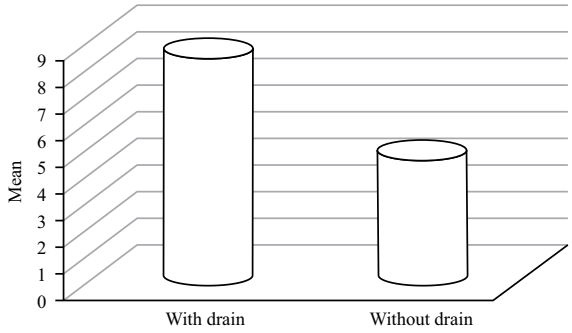

Fig. 4: Post-operative hospital stay (days)

Table 7: Wound infection

	Drain		
Wound infection	Without drain	With drain	Total (%)
Absent	98 (49%)	86 (43%)	100 (50)
Present	2 (1%)	14 (7%)	100 (50)
Total	100 (50%)	100 (50%)	200 (100)

p-value = 0.007

Table 8: Sub hepatic collection

	With drain		Without drain		
Sub hepatic Collection (mL)	Mean	SD	Mean	SD	Mean difference
1st POD	26.3	12.7	20	7.84	6.3
3rd POD	37.85	12.65	24.9	9.34	12.95
7th POD	22.83	9.88	15.35	5.53	7.48

Table 9: Post-operative hospital stay(days)

	With drain		Without drain		
	Mean	SD	Mean	SD	Mean difference
Hospital stay (Days)	8.38	1.86	4.68	1.25	3.7

Table 11: Sub hepatic collection in different studies

	With drain		Without drain	
Study	N	Mean (SD)	N	Mean (SD)
Shamim	79	3.13 (3.6)	76	2.85 (3.6)
Pichhio	15	30 (5)	15	30 (5)
Lucarelli	53	55 (23.2)	53	77 (26.02)
Present study	100	37.85 (12.65)	100	24 (9.34)

day 15.35±7.48 mL. The p<0.001, there was statistically significant difference noted between the two study groups (Fig. 3, Table 9).

In the present study the mean hospital stay in patients with drain was 8.38±1.86 days and patients without drain was 4.68±1.25 days. The p<0.001, there was statistically significant difference noted between two study groups (Fig. 4).

DISCUSSION

In the present prospective study 200 cases with symptomatic and asymptomatic cholelithiasis were subjected for elective cholecystectomy. These cases were randomly divided into drain and without drain group. Statistics obtained in this study conducted in Department of Surgery J.A. Group of Hospitals and Gajra Raja Medical College Gwalior from December 2015 to November 2016 were compared with other studies

In the present study 02 (1%) patient in without drain group and 14 (7%) patients in drain group developed postoperative wound infection. Wound infection more common in open procedure.

In Bawahab study, 1 (2.6%) patient in with drain group and 1 (1.54%) patient in without drain group developed wound infection (Table 10).

Subhepatic collection: In the present study mean subhepatic collection noted in patients with drain on 1st day was 26.3±12.7 mL and 3rd Day was 37.85±12.65 mL and on 7th day was 22.83±9.88 mL. Mean subhepatic collection in patients without drain on 1st day was 20±7.84 mL and on 3rd day was 24±9.34 mL and on 7th day 15.35±7.48 mL. The p<0.001, there was statistically significant difference noted between the two study groups.

Hospital stay: In Bawahab study showed hospital stay of 4.48±2.18 days in patients with drain group and of 2.5±2.2 days in patients of without drain group.

In the study conducted by Gurer, hospital stay in drain group was 4±2.9 days and in without drain group was 2.9±1.9 days.

In the present study post operative hospital stay in drain group was 8.38±1.86 days and without drain group was 4.68±1.25 days.

CONCLUSION

In the present study 200 cases with primary diagnosis of symptomatic and asymptomatic calculous cholecystitis were subjected to elective cholecystectomy and were randomly divided into drain and without drain group from December 2015 to November 2016. The following conclusions can be made from the study:

- Patients in “without drain” group have noted lesser post operative pain, lesser subhepatic collection and shorter hospital stay and less wound infection in elective Cholecystectomy compare to “with drain” group
- There is more wound infection noted in open cholecystectomy (OC) as compare to laparoscopic Cholecystectomy

- There is no significant difference as far as post operative wound infection in elective laparoscopic Cholecystectomy with drain or without drain. Therefore in patients undergoing elective Laparoscopic cholecystectomy keeping drain can be avoided as it does not provide any additional benefit

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