



Surgery

A COMPARATIVE STUDY OF RETRIEVAL OF GALL BLADDER DURING LAPAROSCOPIC CHOLECYSTECTOMY WITH ENDOBAG VERSUS WITHOUT ENDOBAG IN TERMS OF BENEFITS AND COMPLICATIONS.

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ABSTRACT

Introduction: In laparoscopic cholecystectomy gall bladder perforation and spillage are the common complications encountered during dissection and removal of gall bladder. Gall bladder removal can be completed simply and safely when a retrieval bag is used. This trial was undertaken to compare the retrieval of gall bladder with endobag versus without endobag. A sterile latex glove was used as an endobag which is an easily available and a cheaper alternative with similar effectiveness.

Aim: To compare the benefits and complications of extraction of gallbladder in an endobag v/s direct extraction through 10 mm port in laparoscopic cholecystectomy in terms of operative time, port site infection, port site pain and duration of hospital stay.

Materials and Methods: This study was carried out in Department of Surgery SN Medical College Agra to compare benefits and complications of extraction of gallbladder in an Endobag versus direct extraction. A total of 100 patients with symptomatic cholelithiasis were included in the study after surgical assessment and confirming diagnosis. They were divided into two groups of 50 each by randomization.

Results: In this study of 100 patients 92% were females and 8% were males. With the use of an endobag, mean operative time taken was 1 hour as compared to 1.3 hours taken in procedure without using an endobag. Mean hospital stay was of 3.45 days and only 2% patients had port site infection in cases with endobag as compared to 3.6 days and 10% patients had port site infection in cases without endobag. There was no spillage of stones and bile with the usage of endobag.

Conclusion: An endobag for retrieval of gall bladder during laparoscopic cholecystectomy was found better than the direct extraction of the gall bladder. A sterile latex glove made endobag is a simple, safe and cost-effective method and can be used instead of endobag.

KEYWORDS : Laparoscopic Cholecystectomy, Gall Bladder Retrieval, Glove Made Endobag.

INTRODUCTION

Laparoscopic cholecystectomy, introduced in 1987 is now the preferred method of cholecystectomy. Laparoscopic cholecystectomy has revolutionized the surgical management of gall bladder disease by reducing post-operative pain, risk of surgical infection and incisional hernia. Laparoscopic cholecystectomy is also reported to have an edge over open cholecystectomy due to shorter hospital stay, early return to work and overall low cost.[1]

Gall bladder perforation and spillage are the common complications encountered during dissection and removal of gall bladder, however there has been increasing reports of infectious complications due to unretrieved stones and spillage of bile. [2]

After laparoscopic cholecystectomy, extraction of the gallbladder is a time consuming and difficult job. Although, several techniques and methods are suggested to facilitate the retrieval of gallbladder safely, problems occurring during retraction have not been completely remedied and generally widening of the port site is required. This increases the risk of bleeding, haematoma and infection as well as leaving a risky area for incisional hernia [3].

Gall bladder removal can be completed simply and safely when a retrieval bag is used [4]. The device should be strong, leak proof, resistant to tear and should have a sufficient capacity to cope with the largest gall bladder and stone load.

This trial is undertaken to compare the retrieval of gall bladder during laparoscopic cholecystectomy with endobag versus without endobag.

MATERIALS AND METHODS

This study was conducted in Department of surgery, at Sarojini Naidu Medical College, Agra from December 2016 to December 2017. A total of 100 patients of either sex with proven cholelithiasis, who were admitted in surgery department were included in the study. All the patients with proven cholelithiasis on USG underwent clinical, general, systemic examinations and required investigational procedures and only those patients who were fit for surgery were included in the study. Subjects with associated liver/ renal pathology,

carcinoma gall bladder, obstructive gall bladder and any functional or psychiatric disorder were excluded from the study.

After obtaining written consent regarding the study, 100 patients were divided into two groups involving 50 each by randomization.

Group A: Patients undergoing gall bladder extraction with latex glove made endobag.

Group B: Patients undergoing gall bladder extraction without endobag.

TECHNIQUE

After overnight fasting, all patients were given general anesthesia and underwent laparoscopic cholecystectomy using four port technique. After the gall bladder was separated from the liver bed, a sterile rubber glove endobag was inserted inside the abdominal cavity and the gall bladder with any spilled stones were put inside the endobag and was retrieved through the 10mm epigastric port in group A patients whereas, the gall bladder was extracted directly through 10mm epigastric port in group B patients without any endobag. The operative time was noted down in each case.

Post operatively the patients were monitored and were followed up at 1 week, 1 month and 4 months interval to look for any complications.

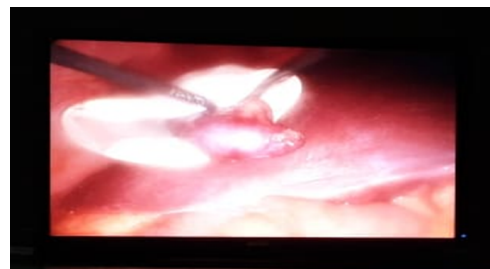


FIG 1. Intraoperative picture of glove made endobag with gall bladder inside it.



Fig 2. Endobag made of sterile latex glove

RESULTS

The results of this study were statistically analyzed using SPSS software. Chi square test and student's t test was used for analysis and probability value of less than 0.05 was considered as significant.

TABLE 1: patient's characteristics.

PATIENTS	TOTAL NUMBER	PERCENTAGE %	AGE (YEARS)	MEAN
FEMALE	92	92	16-70	38
MALE	8	8	25-70	42
TOTAL	100	100	16-70	39

This study included a total no. of 100 patients with mean age of 39 years presented with symptomatic cholelithiasis. 92% were females and 8% were males.

TABLE.2.PATHOLOGICAL TYPES OF CHOLECYSTITIS

Pathological types of cholecystitis	Group A	Group B	Total number	Percentage	
				Group A	Group B
Chronic calculus cholecystitis	42	44	86	84%	88%
Acute calculous cholecystitis	3	3	6	6%	6%
Empyema of gall bladder	1	0	1	2%	0%
Mucocoele of gall bladder	4	3	7	8%	6%
Total	50	50	100	100%	100%

The statistical analysis showed that difference in these groups was insignificant [p- value 0.22].SEE TABLE.2.

In group A:

The mean operative time was 1 hour. There was no intraabdominal and port site spillage of gall stones or bile. Port site infection occurred in 1(2%) patient.

In Group B:

The mean operative time was 1.30 hours. Intraabdominal and port site spillage of gall stones and bile occurred in 4(8%) patients and 6(12%) patients respectively. Port site infection occurred in 5(10%) patients.

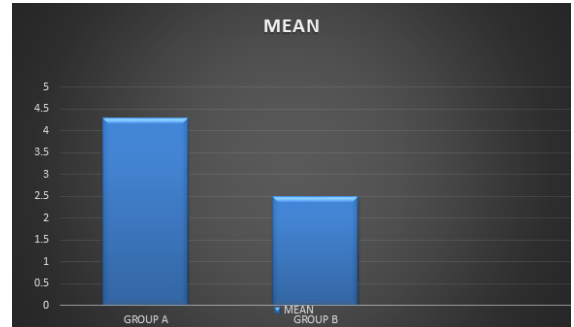
The statistical analysis between the two groups is shown in table.3.

TABLE.3.

Comparative factors	Group A	Group B	P value	Inference
Duration of surgery (hour)	1 hour	1.30 hour	0.1371	Insignificant
Port site infection	1(2%)	5(10%)	0.018	Significant
Duration of hospital stay(days)	3.45	3.60	.05700	Insignificant

TABLE 4. COMPARISON OF POSTOPERATIVE PAIN IN TERMS OF MEAN VISUAL ANALOGUE SCALE(VAS)

Treatment groups	Total no. of cases	Mean of VAS	p- value	Inference
Group-A	50	3.675	0.08269	Significant
Group-B	50	2.475		



COMPARISON OF POST-OPERATIVE PAIN IN TERMS OF MEAN VAS

DISCUSSION

Cholecystectomy has evolved from open to laparoscopic approach over the past decade [5], laparoscopy being the current gold standard for treating gallstone disease.

Spilled or implanted gallstones and spillage of infected bile in the peritoneal cavity are common events during LC without using endobag. Spillage of infected bile and gallstones in the peritoneal cavity and retrieval port site with implantation of the gallstones in the subcutaneous tissues of the abdominal wall causing discharging sinus or abscess are reported complications [6].

This study included a total of 100 patients with symptomatic cholelithiasis; 92 were females and 8 were male patients with mean age of 39 years. In this study the mean operative time was 1 hour in group A patients and 1.30 hour in group B patients the results were comparable with other studies. In study by Makama JG and Ameh EA [7] the mean operative time was 37 minutes and in study by Kirshtein B [8] et al the mean operative time was 42.5 minutes.

In our study, the mean duration of hospital stay was 3.45 days in group A whereas it was 3.60 days in group B patients. In study by Stevens KA et al., the mean hospital stay was 2.6 days [9] and in study by Singh DP et al., duration of hospital stay depend upon the asymptomatic state of the patient. The statistical data in these studies is comparable with our study.

In present study, the port site infection in group A was 2% and in group B was 10%. A.I. Memon et al [10] reported retrieval port site infection 5% of their patients despite using endobag. Ali SA et al [11] and Helme et al [12] stated that best way to avoid complications of spilled gallstones and port site contamination is to use endobag.

Karthik S et al [13] study had retrieval port site infection 1.8 %. Taj M N et al [14] study showed that; port site infection was 5.28 % without using endoglove, whereas it was 0.20 % when using endoglove. Wound infections can be prevented by sterile techniques and the use of specimen endobags for specimen extraction [15]. Endobag facilitates collection of operative specimens, spilled gallstones and minimizes the chances of contamination of the abdominal cavity and the retrieval port site [16].

In this study, we used a sterile glove made endobag instead of a commercially available endobag which is almost equally effective and is more cost effective.

CONCLUSION

I conclude that endobag should be used for the extraction of gallbladder as it prevents spillage of stones and bile. It also reduces the incidence of port site infection, without taking any addition time during surgery or prolonging the hospital stay. Also, the sterile rubber gloves endobag is simple, inexpensive and safe technique in place of commercially available endobag for retrieval of gallbladder specimen and spilled gallstone.

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