SURGICAL GLOVE BAG VERSUS NO GLOVE BAG FOR RETRIEVAL OF THE GALLBLADDER FOLLOWING LAPAROSCOPIC CHOLECYSTECTOMY: A RANDOMIZED COMPARATIVE STUDY.

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INTRODUCTION

Gallstone disease constitutes a worldwide major health problem as it is responsible for 1.4 million visits and 750,000 cholecystectomies per year in the United States. Laparoscopic cholecystectomy (LC) is the "Gold standard" for treatment of symptomatic gallstone diseaseand is one of the most common abdominal laparoscopic procedures worldwide. Intraoperative perforation of the gallbladder is among the common complications to be taken into consideration as bile or stone spillage could give rise to early or late postoperative complications. It has been reported to occur with a range of 10% - 36% in different studies. To avoid sequalae of GB perforation especially surgical site infection (SSI), several methods and devices have been used for gallbladder retrieval from the abdominal cavity following LC. No one method has been shown to be superior to another.

AIM OF THE WORK

The aim of this randomized comparative study is to compare the surgical site infections and / or complications with and without the use of a powder-free surgical glove bag for gallbladder retrieval following iatrogenic gallbladder perforation during laparoscopic cholecystectomy for uncomplicated gallstone disease.

PATIENTS AND METHODS

After approval of local ethics comittee, informed written consent were taken from all patients included in the study. The present prospective study included 120 patients with symptomatic uncomplicated gallstone disease who underwent laparoscopic cholecystectomy in which iatrogenic gallbladder perforation with bile and/or stone spillage was encountered. The study was conducted at the Hepatobiliary-pancreatic surgical unit of the Alexandria main university hospital. Prospective assessment: thorough history taking, physical examination, routine laboratory investigations with focusing on serum bilirubin, alkaline phosphatase and liver enzymes and ultrasound abdomen with biliary assessment.

RESULTS

SSI at the subxiphoid port was reported in three cases, two cases in Non-glovebag group (3.3%) and one case in glovebag group (1.7%). There was no statistically significant difference between both study groups as regards SSI (P =0.56).Three cases were superficial SSIs .They were managed by frequent dressings and antibiotic administration guided by culture and sensitivity studies.

Table 1: Comparison between the study groups according to operative time and retrieval time

	Total (n = 120)	Glove		t	p
		No (n = 60)	Yes (n = 60)		
Operative time					
Min. – Max.	28.0 – 102.0	28.0 – 98.0	31.0 – 102.0		
Mean ± SD.	54.49 ± 17.35	50.98 ± 13.88	58.0 ± 19.73	2.25*	0.03*
Median (IQR)	49.0 (41.0 – 62.0)	46.50(41.0 –61.0)	52.0 (42.0 – 69.0)		
Retrieval time					
Min. – Max.	1.0 – 4.20	1.0 – 4.10	1.10 – 4.20		
Mean ± SD.	2.29 ± 0.66	2.14 ± 0.57	2.44 ± 0.71	2.56*	0.01*
Median (IQR)	2.20 (1.9 – 2.6)	2.10 (1.9 – 2.3)	2.40 (2.0 – 2.9)		

Table 2: Comparison between the two studied groups according to post operative pain score

Pain score	Total (n = 120)	Glove		U	p
		No (n = 60)	Yes (n = 60)		
After 2hr.					
Min. – Max.	2.0 – 8.0	2.0 – 7.0	2.0 – 8.0		
Mean ± SD.	4.01 ± 1.07	3.87 ± 1.03	4.15 ± 1.10	1492.50	0.09
Median (IQR)	4.0 (3.0 – 4.5)	4.0 (3.0 – 4.0)	4.0 (4.0 – 5.0)		
After 6hr.					
Min. – Max.	2.0 – 6.0	2.0 – 6.0	2.0 – 5.0		
Mean ± SD.	2.92 ± 0.87	2.83 ± 0.89	3.0 ± 0.84	1572.50	0.20
Median (IQR)	3.0 (2.0 – 3.0)	3.0 (2.0 – 3.0)	3.0 (2.0 – 3.0)		
Z	8.817*	6.069*	6.421*		
p_1	<0.001*	<0.001*	<0.001*		

Table 3: The postoperative course and complications encountered in the two studied groups.

Postoperative complications	NG-group (n=60)		G-group (n = 60)		χ^2	p
	No.	%	No.	%		
Bleeding	0	0.0	1	1.7	1.008	FEp=1.00
Bile Duct injury	0	0.0	0	0.0	-	-
Bile leakage	0	0.0	0	0.0	-	-
Port site hernia	0	0.0	0	0.0	-	-
Wound infection	2	3.3	1	1.7	0.34	FEp=0.59
Superficial SSI	2	3.3	1	1.7	0.34	FEp=0.59
Deep SSI	0	0.0	0	0.0	-	-
Organ/space SSI	0	0.0	0	0.0	-	-
Need for readmission						
No	59	98.3	60	100.0	1.008	FEp=1.00
Yes	1	1.7	0	0.0		
Causes of readmission	(n = 1)		(n = 0)			
Subhepatic collection	1	1.7	0	0.0	1.008	FEp=1.00

CONCLUSION

Powder-free surgical glove is a simple, cost-effective, safe method for retrieval of gall bladder in laparoscopic cholecystectomy. In uncomplicated chronic cases of cholelthiasis, there is no advantage for usage of glove bag for retrieval of specimen for reduction of post-operative pain and port site infections.