

THE USE OF DRAIN VERSUS NO DRAIN FOLLOWING IATROGENIC GALLBLADDER PERFORATION DURING LAPAROSCOPIC CHOLECYSTECTOMY FOR UNCOMPLICATED GALLSTONE DISEASE

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Introduction

Cholelithiasis is among the most common gastrointestinal illnesses. Approximately 80% of the cholecystectomies are performed laparoscopically. Laparoscopic cholecystectomy (LC) is considered the ‘gold standard’ for treatment of cholelithiasis. Despite the fact that cholecystectomy is one of the most performed surgical procedures and the issue of drainage would be considered a relatively simple one, surgeons have failed to put an end to this controversy. Iatrogenic perforation of the gallbladder is an event which occurs in up to 30% of laparoscopic cholecystectomies. It has been commonly assumed that contamination of bile in the abdominal cavity could be a cause of infection and lead to the formation of a residual abscess or even to surgical wound infection.

Aim of the work

The present prospective case-control study compared the surgical outcomes and postoperative complications of laparoscopic cholecystectomy performed for uncomplicated gallstone disease with and without the insertion of an intra-abdominal drain in patients where iatrogenic gallbladder perforation was encountered.

Subjects and methods

After approval of the local ethics committee, all the patients included in the study will be informed about the procedure and will sign an informed written consent before carrying the procedure. The present prospective study included 100 patients with symptomatic uncomplicated gallstone disease in whom iatrogenic gallbladder perforation was encountered during laparoscopic cholecystectomy performed at the Hepato-biliary-pancreatic surgical unit of the Alexandria main university hospital.

Preoperative assessment: thorough history taking, Routine laboratory investigations focusing on serum bilirubin, alkaline phosphatase and liver enzymes, ultrasound abdomen and pelvis and MRCP for selected cases.

Results

In drain group, 6 patients (12%) had an asymptomatic subhepatic collection on ultrasonography by the end of the first postoperative week compared to 3 patients (6%) in the no drain group. Only one patient in the no drain group developed a symptomatic subhepatic collection. The patient was readmitted to the hospital where the collection was aspirated percutaneously without the need for insertion of a pig tail catheter drain.

Table (1): intra-operative events encountered in both study groups.

Intra-operative events	Drain group (n = 50)		No-drain group (n = 50)			p
	No.	%	No.	%		
GB bed bleeding	14	28.0	20	40.0	$\chi^2=1.604$	0.205
Cystic artery bleeding	14	28.0	10	20.0	$\chi^2=0.877$	0.349
Stone spillage	4	8.0	6	12.0	$\chi^2=0.444$	0.505
Bile duct injury	0	0.0	0	0.0	–	–
Visceral injury	0	0.0	0	0.0	–	–
Operative time (minutes)						
Min. – Max.	67.0 – 144.0		37.0 – 102.0		t= 1.894	0.061
Mean ± SD.	72.30 ± 19.97		65.52 ± 15.56			
Median (IQR)	73.0 (58.0 – 83.0)		64.0 (55.0 – 76.0)			

Table (2):The postoperative pain score in both study groups

Post-operative pain (POP)	Drain group (n = 50)	No-drain group (n = 50)	U	p
6 hrs postoperative				
Min. – Max.	1.0 – 9.0	1.0 – 7.0	735.0*	<0.001*
Mean ± SD.	4.72 ± 2.06	3.22 ± 1.72		
Median (IQR)	5.0 (3.0 – 7.0)	3.0 (2.0 – 4.0)		
12 hrs postoperative				
Min. – Max.	1.0 – 7.0	1.0 – 5.0	760.0*	<0.001*
Mean ± SD.	3.58 ± 1.60	2.48 ± 1.11		
Median (IQR)	3.0 (2.0 – 5.0)	2.0 (2.0 – 3.0)		
24 hrs postoperative				
Min. – Max.	0.0 – 7.0	1.0 – 4.0	910.0*	0.016*
Mean ± SD.	2.80 ± 1.67	1.98 ± 0.91		
Median (IQR)	3.0 (1.0 – 4.0)	2.0 (1.0 – 3.0)		
Average through the first postoperative day				
Min. – Max.	1.0 – 7.33	1.0 – 4.67	747.50*	<0.001*
Mean ± SD.	3.70 ± 1.64	2.56 ± 1.13		
Median (IQR)	3.83 (2.0 – 5.0)	2.0 (2.0 – 3.33s)		

Conclusion

IGP is a common incidence during laparoscopic cholecystectomy with an incidence reaching 30%. Insertion of a drain in such situation has no added value as it increases postoperative pain and has no effect on the incidence of postoperative collection. Further studies are needed to analyze the drawbacks vs the benefits of inserting a drain after IGP.