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Evaluation of Cases of Biliary Leakage Following Cholecystectomy

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ABSTRACT

Background: Cholecystectomy is the only effective treatment of symptomatic gallstones and other gallbladder conditions. The present study evaluated biliary leakage following cholecystectomy. **Methods:** The present study was conducted on 74 patients who underwent cholecystectomy of both genders. In all patients, clinical presentations such as biliary leak in both open and laparoscopic cases were evaluated. **Results:** Out of 74 patients, there were 34 males and 40 females. In open cholecystectomy, there were 5 cases and in laparoscopic cholecystectomy, 3 cases of biliary leakage. The difference was significant (P< 0.05). The site of leakage was GB bed in 3, cystic duct in 2, CHD in 2 and CBD in 1 case. **Conclusion:** Authors found maximum number of biliary leak in open cholecystectomy cases as compared to laparoscopic cholecystectomy.

Keywords: Laproscopic cholecystectomy, Open cholecystectomy, biliary.

INTRODUCTION

Cholecystectomy is the only effective treatment of symptomatic gallstones and other gallbladder conditions. The broad two types are laparoscopic cholecystectomy, and the open cholecystectomy.[1] The introduction of laparoscopic cholecystectomy has dramatically changed the approach to gallstone disease over the last decade. However, the laparoscopic approach has been associated with a higher incidence of biliary complications, particularly in the early years of its adoption. Bile duct leak is an infrequent but serious disorder. The cause of bile duct leak can be either iatrogenic or more rarely, traumatic.[2] Bile leak after laparoscopic cholecystectomy is generally due to a minor biliary complication, although it can sometimes herald a major duct injury. Several series have reported bile leakage rates of 1.2–4-0 per cent in laparoscopic cholecystectomy, which is higher than the incidence with open cholecystectomy.[3]

The post operative biliary leakage is also more common following cholecystectomy. And also because of long learning curve of laparoscopic procedure, IBDI is on higher side in laparoscopic cholecystectomy than in open variety.[4] Unrecognized or late diagnosis of bile duct injury can lead to serious consequences such as hepatic failure or death. The great majority (95%) occurs after hepatobiliary surgery and the most common cause is related to open and laparoscopic cholecystectomy. Biliary injury occur in 0.1% - 0.2% and 0.3% - 0.8% after open and laparoscopic cholecystectomy respectively.[5] The present study evaluated biliary leakage following cholecystectomy.

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MATERIALS AND METHODS

The present study was conducted in department of general surgery. It comprised of 74 patients who underwent cholecystectomy of both genders. Patients were informed regarding the study and written consent was taken. Ethical approval was obtained prior to the study.

Patient information such as name, age, gender etc. was recorded. In all patients, clinical presentations following biliary leak, site of bile leak, open and laparoscopic cases were evaluated. Results thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table 1: Distribution of patients

Total- 74		
Gender	**Male**	**Female**
Number	34	40

[Table 1] shows that out of 74 patients, there were 34 males and 40 females.

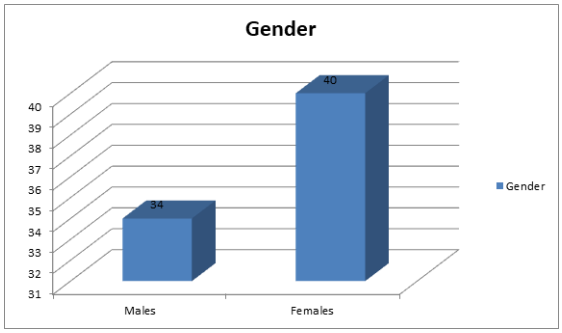

Figure 1: Distribution of patients

Table 2: Type of cholecystectomy and biliary leakage

Type	Number	Biliary leakage	P value
Open cholecystectomy	44	5	0.05
Laparoscopic cholecystectomy	30	3	

[Table 2, Figure 2] shows that in open cholecystectomy, there were 5 cases and in laparoscopic cholecystectomy, 3 cases of biliary leakage. The difference was significant (P< 0.05).

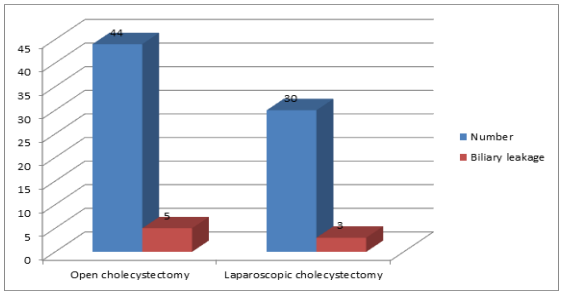

Figure 2: Type of cholecystectomy and biliary leakage

Table 3: Site of leakage

Site	Number	P value
GB bed	3	0.05
Cystic duct	2	
CHD	2	
CBD	1	

[Table 3] shows that site of leakage was GB bed in 3, cystic duct in 2, CHD in 2 and CBD in 1 case. The difference was significant (P< 0.05).

DISCUSSION

Postoperative bile leak is usually the result of oblivious injury to the bile ducts, inappropriate ligation of the cystic duct stump, or leakage from the liver bed or the drainage site and usually precipitated with a distal block from residual stones or strictures.[6] Minor leakage may stop spontaneously while major leakage may be a serious problem to the patient. These patients present with external or internal biliary leakage resulting in localized or generalized biliary peritonitis 11% - 23% of biliary injuries are diagnosed intraoperatively while the remaining is diagnosed postoperatively or after discharge.[7] The present study evaluated biliary leakage following cholecystectomy.

In present study, out of 74 patients, there were 34 males and 40 females. Carroll et al,[8] included twenty-one patients with symptomatic bile leak following laparoscopic cholecystectomy underwent assessment of the extent of the bile leak via ultrasound/CT and ERCP. Following diagnosis, the patients were treated by sphincterotomy and biliary drainage and, if necessary, percutaneous drainage of the bile collection. Only one patient required primary surgical treatment following diagnosis of a major duct injury. The other 20 were treated by a combination of sphincterotomy (including a stent in most) plus percutaneous drainage in six. In 19 of 20, this minimal access approach stopped the leak.

We found that in open cholecystectomy, there were 5 cases and in laparoscopic cholecystectomy, 3 cases of biliary leakage. Early management in a specialized center is the cornerstone for satisfactory results. Inadequate management usually results in serious co-morbidities and a more difficult repair. Surgery is the best method for the treatment, but it is associated with serious complications and great mortality. Preoperative management ranges from simple drainage and early transfer up to bilio-enteric anastomosis. Minimally invasive endoscopic procedure with evidenced results equal to surgical outcomes became the treatment of choice. As compared to surgery, endoscopic treatment may require many sessions, and is not effective in all cases.[9]

Adamsen et al,[10] in their study a total of 1190 Cholecystectomies were carried, out of which 785 were open cholecystectomies and rest 405 were laparoscopic cholecystectomies. In this study, 20 bile leak cases were registered, out of which 6 were diagnosed as major bile duct injury and another 4 cases of bile leak were diagnosed as originated either from GB bed, duct of luschka or minor bile duct injury. In the rest 10 cases, bile leak was presumed to be either from GB bed, duct of luschka or minor bile duct injury as they resolve spontaneously after conservative management. In this study the incidence of major bile duct injury after cholecystectomy is 0.50 whereas the overall incidence of bile leak after cholecystectomy is 1.68.

Karvonen et al,[11] conducted a study in which 155 patients with postoperative bile leak were managed and evaluated. The definitive management of bile leak was done within 0-143 days. Patients were managed accordingly using, endoscopy in 116 patients (plus percutaneous techniques in 4 patients) and surgery in 39 patients. The endoscopic treatment proved very effective in 94.7% of the patients with simple bile leak and 44.2% of the patients with complex bile leak.

CONCLUSION

Authors found maximum number of biliary leak in open cholecystectomy cases as compared to laparoscopic cholecystectomy.

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