

Introduction

Liver Parenchymal damage may lead to biliary injuries and bile leaks. Three types of acute complications following biliary trauma are biloma, biliary fistula, and biliary peritonitis. Biliary injuries after blunt traumas are uncommon; it was reported in 2.8–7.4% of patients. The site of biliary tract injuries may involve; in trahepatic or extra hepatic bile ducts. There is a challenge in the diagnosis of biliary injuries and needs a high index of suspicion as the usual images are not specific. So, the diagnosis usually comes during exploratory surgery or after the development of late complications. Most of the patients with blunt liver trauma have minor bile leaks with a good response to conservative treatment. However, the management of major bile leak is a difficult dilemma and can affect patient recovery. Treatment options including endoscopic, percutaneous or surgical intervention.

Aim of the Work

The aim of this observational prospective study was to detect the incidence and to evaluate the outcomes of delayed biliary complications related to blunt liver trauma managed by conservative and operative treatment.

Patients and Methods

After approval of local ethics committee, informed consent was taken from all patients included in this study. All patients admitted by liver injuries due to blunt trauma while the penetrating trauma excluded from study in a period of one year. Prospective assessment consisted of Initial evaluation and resuscitation on admission, history taking, physical examination, routine lab investigations and radiological evaluation of liver injury then determining the management if it was conservative or operative intervention. Late clinical examination, follow up routine labs and repeating radiological investigation within 30 days from admission were done to detect biliary complications. After diagnosis was established the treatment options divided into biliary and non biliary interventions.

Results

Table : Distribution of biliary complications and their management

	Total (n = 38)		Conservative (n = 33)		Operative (n = 5)	
	No.	%	No.	%	No.	%
Imaging biliary finding						
No	33	86.8	29	87.9	4	80.0
Minor biliary injury	4	10.5	3	9.1	1	20.0
Major biliary injury	1	2.6	1	3.0	0	0.0
Delayed biliary complications						
No	33	86.8	29	87.9	4	80.0
Biloma	3	7.9	3	9.1	0	0.0
Biliary fistula	1	2.6	0	0.0	1	20.0
Biliary peritonitis	1	2.6	1	3.0	0	0.0
Delayed non biliary complications						
No	35	92.1	31	93.3	4	80.0
Chest infection	2	5.3	1	3.0	1	20.0
Brain infection	1	2.6	1	3.0	0	0.0
Delayed biliary management						
No	33	86.8	29	87.9	4	80.0
Aspiration / Pigtail	4	10.5	3	9.1	1	20.0
Biliary intervention ERCP / PTD	1	2.6	1	3.0	0	0.0

37 cases of total 43 cases included in this study treated conservatively (86% of total cases of study). All 6 cases not responded to initial resuscitation and maintained unstable in ICU went for operative management. Generally biliary complications had been detected in 5 cases in our study. The mean time of diagnosis of biliary complications was 5.8 ± 1.92 days from admission. 4 of those 5 cases were in NOM group representing 12.1% of NOM cases and only one case was in operative group (20% of operative cases). The most common biliary complication was biloma that found in 3 NOM cases (60% of total biliary complications). 4 of 5 cases with biliary complications managed by non biliary intervention, and only 1 case managed by biliary interventions in form of ECRP and PTD insertion, while there was no biliary surgery applied in any case.

Conclusion

- 1-Early detection of biliary complications is the main goal in their management.
- 2-Close follow up by repeating CT, late physical examination and routine lab investigation is the cornerstone in early detection of biliary complications.
- 3-Biliary complications due to blunt liver trauma are suspected when the patient has one of the following after the trauma:
 - Fever, abdominal pain and developing clinical jaundice.
 - Elevated sepsis markers or serum bilirubin.
 - Centrally located severe grade injury mainly in right lobe of liver.
 - Progression of collection on the repeated CT.