



Case Report

# Management of a patient with a bile leak from hepatico-jejunostomy performed for bile duct injury

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## Abstract

Bile leak is a known complication following hepatico-jejunostomy performed for bile duct injury. We presented a case history where a leak was successfully managed with an open abdomen which allowed sepsis to settle and facilitate natural healing.

## Key words

Bile leak, Hepatico-jejunostomy, Bile duct injury.

## Introduction

Iatrogenic bile duct injuries are more common in laparoscopic (0.3-0.5%) than open (0.1-0.2%) [1] cholecystectomy. Strasberg, et al. classified the bile duct injuries into five classes which is a modified version of Bismuth classification [2]. It has five classes from A-E. Among those, class E includes damage to the common hepatic ducts or major hepatic ducts with or without stricture. We reported a case of 44 years old female admitted with complete transection of common hepatic duct in the hilum (Bismuth-Strasberg Class E 3) following laparoscopic

cholecystectomy. She developed a bile leak on the tenth post-operative day which was managed with an open abdomen.

## Case report

A 44 years old woman underwent laparoscopic cholecystectomy for gallbladder neck calculus with distended gallbladder. She developed bile leak on the fourth postoperative day and was transferred to our unit for further management. On admission, pulse rate was 100/min, blood pressure was 120/80 mmHg, respiratory rate was 24/minute, and abdomen was slightly



distended with localized tenderness over right hypochondrium. On Ultrasound scan abdomen, distal common bile duct was unable to visualize and there was a localized collection seen in the hepatorenal pouch. Endoscopic Retrograde Cholangio Pancreatography (ERCP) showed evidence of a common bile duct injury. Her total bilirubin was 29.82  $\mu\text{mol/l}$  (1-17  $\mu\text{mol/l}$ ). Broad spectrum antibiotics were started and prepared for laparotomy.

Emergency laparotomy was done which revealed complete transection of common hepatic duct just after the confluence of major hepatic ducts. Roux En Y loop was created from the proximal jejunum and End to Side Hepatico Jejunostomy was performed. A feeding tube was placed across the anastomotic site, exteriorized via the jejunal loop. The proximal end of the Roux loop was anastomosed to the stomach as an access path to the anastomosis. A large bore drainage tube was placed in the sub hepatic space.

Patient was transferred to intensive care unit (ICU) and was extubated on first post-operative day. Patient recovered from biliary peritonitis with bilirubin levels becoming normal. Patient was transferred back to ward on post-operative day 6 and was on a normal diet by the seventh post-operative day, oral sips has been established from the third day.

The abdominal drain was removed on day 8 which had no drainage from day four. Two days later a bile leak was noted through the laparotomy incision. Contrast study was done through the feeding tube which revealed that it had fallen back in to the jejunum. Therefore the degree of anastomotic breakdown could not be interpreted. Ultrasound scan showed generalized free fluid in the abdomen.

A relaparotomy was done on post-operative day 11 which revealed a bile leak into the peritoneal cavity (about 1 litre). Peritoneal cavity was thoroughly washed out with normal Saline. The site of the anastomosis was not disturbed. A large bore drain tube was replaced close to the hepatorenal pouch. The abdomen was kept open as a laparostomy bowel loops being protected using uribag.

Daily washout of the peritoneal cavity with Normal Saline was done through the drain tube and abdominal dressing was changed twice daily. The leak through the open abdomen gradually declined and repeat Ultrasound scan showed no collections and no intra-hepatic duct dilatation. Abdomen was closed after two weeks.

## Discussion

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Strasberg-Bismuth class E3 is a major bile duct injury with a higher morbidity and mortality rate due to biliary peritonitis. Roux-en-Y hepatico jejunostomy is the accepted treatment [3]. Following hepatico-jejunostomy bile leak is a known complication and strictures may occur later on [4]. Having a large bore drain placed in the sub hepatic space for at least one week will help to drain if a bile leak occurs. Having an access loop allows endoscopic dilatation of anastomotic strictures [5].

In this patient, the drain tube was removed on day 8 and developed a leak 2 days later. A reopening was needed as it was a large leak. The anastomotic site was not disturbed and drainage to the exterior was achieved with a sub hepatic drain and leaving the abdomen open. The drainage of leak minimized biliary peritonitis allowing natural healing of the anastomotic dehiscence. Open abdomen is well recognized to be life saving in patients with adverse intra-abdominal conditions like infection, leaks,



trauma and increased intra-abdominal pressure [6]. Various methods of temporary cover are described and we used uribag, which is readily available and low cost [7]. Ultrasound scan was done before closure of the laparostomy and revealed no intra hepatic duct dilatation with no free fluid in the hepatorenal pouch or pelvis.

## Conclusion

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In face of a major anastomotic dehiscence, drainage and use of open abdomen (laparostomy) along with intensive care allowed sepsis to settle facilitating natural healing of the leak. The gastric access loop is useful which will allow endoscopic dilatation of stricture, if it occurs.

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