CASE REPORT

# Spontaneus Perforation of the Common Bile Duct in a 3 Years Old Boy

Yohanes Santosa Honggowarsito[1], Fransiska Kusumowidagdo[2], Poerwadi[2]

[1] Pediatric Surgery Resident, Faculty of Medicine, Airlangga University, Surabaya, East Java, Indonesia
[2] Pediatric Surgeon, Department of Surgery, Pediatric Surgery Division, Dr. Soetomo General Hospital, Surabaya, East Java, Indonesia

**ABSTRACT**

Peritonitis caused by biliary tract perforation is unsual. After other causes, such as trauma, biliary tract stone, cyst of choledocal duct, can be rule out, we should reconsider leakage or rupture of biliary tract. We report a 3 years old boy was administered to emergency room with abdominal distended, vomiting and diarrhea, low-grade fever, and diffuse abdominal pain. There's no history of jaundice and abdominal pain before, neither trauma. Sign of peritonitis were found. The patient underwent laparotomy, perforation at common bile duct was found without any other disease. Intra abdominal drain was placed near the leak and primary repair was done with tube drain inside the duct. The pastient discharged after 8 days hospitalized uneventful.

**Keywords:** Billiary peritonitis, CBD perforation, Bile duct disease, Choledochal cyst, Biliary trauma

**Corresponding Author:**
Yohanes Santosa Honggowarsito, MD
Email: ysh.ps777@gmail.com
Tel: +62-82232278898

## INTRODUCTION

Idiopathic perforation of the extrahepatic bile duct is an unsual case. More than one hundred and fifty cases have been reported. It could present in acute condition without any history of biliary tract disease. The symptoms usually with jaundice, abdominal distended with peritonitis, also sometimes with shock septic. The diagnostic without hepatobiliary scan usually cause the delay in surgical intervention. A few described that clinical signs and X-ray can be used as prediction in diagnosis of biliary perforation. This helps the surgeon to make a decision and give the treatment more early.

We report one case of bile duct perforation without any history of biliary tract disease. Preoperative diagnose was peritonitis and the patient underwent surgery for exploration.

## CASE REPORT

A 3 years old boy presented in emergency department with history of progressive abdominal distension, vomiting, fever, and constipation for 5 days. Clinical examination revealed mild fever, no jaundice, and sign of peritonitis was found. There's no history of jaundice and abdominal pain before, neither trauma. Signs of peritonitis were found upon examination. Laboratory values revealed hemoglobin of 8,9 gram/dL and total leucocyte count of 10,660/mm3. There was no free gas from abdominal X-Ray and floating intestine was found from this study, presenting ascites in this patient (Figure 1). We optimized the patient's condition and get to the operating room.

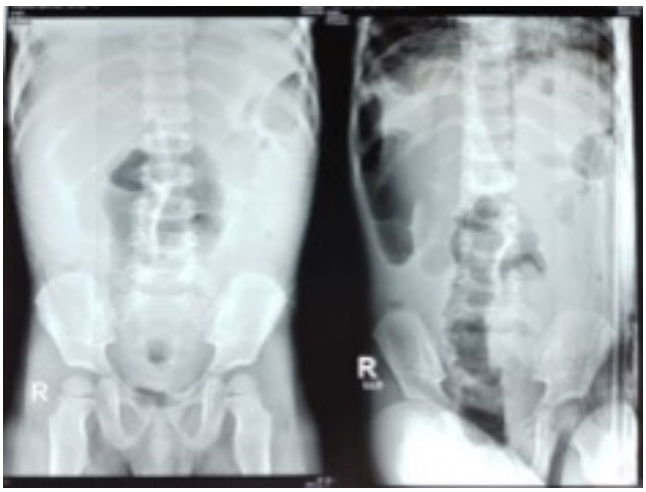

**Figure 1: Plain abdominal X-Ray demonstrate free fluid but there's no free air**

Laparotomy showed bilious ascites (almost 500ml) with perforation of CBD at 3 cm below the junction with the cystic duct (Figure 2). We do primary repair of CBD with drain tube inside the duct and external drain was placed in foramen Winslow. Other abdominal viscera were normal. We administer cephalosporin as therapeutic antibiotic in the postoperative period. The

patient recovered well, drain tube removed on 4th day, after bile production was minimal. And external drain also removed on day 7th day after surgery. The patient discharge from hospital on 8th day and recovered well.

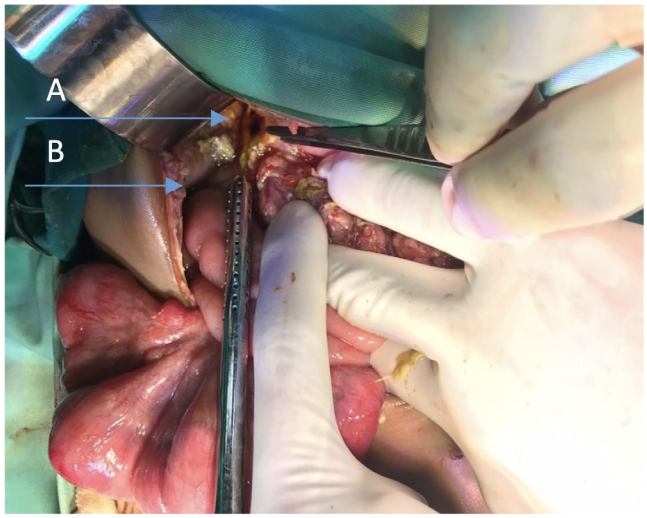


**Figure 2: Photograph taken during surgery shows perforation of common bile duct (A), dilated gall bladder (B)**

## DISCUSSION

Perforation of bile duct spontaneously is a rare case in children compared with adult population. The symptom is distension of adomen with or without jaundice. This can be followed with abdominal mass, vomiting, fever, vomiting, pale stools, and poor weight-gain. It can be present with acute abdomen, localized or generalized peritonitis. The complication could be septisemia shock without history of biliary tract disease.(1). There may be a mild increase of white blood cell. Acholic stools can be use as indicator of biliary tract problem.(4) Paracentesis as diagnostic procedure which show bile-stained ascites but not in early disease, can be use as diagnostic tool. (2) Mostly the diagnosis is made intra-operatively like our caseIn our case, the patient only present sign of peritonitis, mild fever and ascites without jaundice or acholic stools, also there's no history of biliary disease. So our pre-operative diagnosis was secondary peritonitis due to perforated appendicitis.

There are several theories for the cause of spontaneous common bile duct perforation include pancreatico-biliary malunion (PBM), congenital weakness of the wall of common bile duct, ischemia, and obstruction of distal biliary tract. Most perforation's location near the junction of the common hepatic duct and cystic duct, which support the theory about the weakness of bile duct wall and perforate after exceed its critical pressure. (4,5) Pancreatico-biliary malunion is a congenital disorder which the union of the pancreatic duct and biliary duct location is outside the duodenal wall.(1,2) Pancreatic juice which activated after mixing with bile can be destructive while refluxe into the bile duct. The dilated bile duct may cause infection of the duct wall, resulting in inflammation and abses, high risk in perforation.(1) In our case, there's no history of jaundice or biliary disease, no history of trauma, probably the cause of CBD perforation is PBM.

The operative management depend on patient's condition yang intra operative finding and cholangiogram if available. Simple peritoneal drainase can be done if the cholangiogram show no abnormality. In our patient, we repaired the perforation and insert tube drain inside the duct and external drain placed in foramen Winslow. Usually we use T-drain for this procedure, but unfortunately, the item is unavailable at that time. Although some author suggest repair of the perforation can be hazardous and the risk of stricture postoperative. (2) Our patient recovered and discharge at 8th day after surgery uneventful.

## CONCLUSION

The diagnosis of CBD perforation is very difficult, because it's an unsual case and the symptoms that we found from our case is only diffuse abdominal pain which show the sign of peritonitis and ascites from plain abdominal X-ray. The diagnosis was made during the operation after we found bile ascites and after exploration showed perforation of CBD. Simple peritoneal drainage was done in this case and repair the perforation result in good outcome in this patient.

## ACKNOWLEDGEMENT

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