

Case Report

Spontaneous gallbladder perforation in a full-term neonate: A case report

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ABSTRACT

Background: Spontaneous gall bladder perforation is an uncommon event among neonates. The etiology of perforated gall bladder in this pediatric age group is idiopathic. Only 9 cases are available in literature up till 2019.

Case Presentation: We are reporting a case of spontaneous gall bladder perforation in a 15-day-old neonate who presented with vomiting, abdominal distension, and jaundice. The gall bladder was perforated near the fundus. Per-operative cholangiogram showed the normal passage of contrast. Open cholecystectomy was performed. No postoperative biliary complications were observed.

Conclusion: Though Gall bladder perforation of spontaneous nature is rare but should be kept in the differential diagnosis in neonates who present with jaundice, abdominal distension, and acute abdomen.

Keywords: Gall bladder; perforation; neonate, Spontaneous.

INTRODUCTION

Spontaneous gall bladder perforation is rare among neonates. Signs and symptoms vary from the gradual onset of jaundice, and abdominal distension to acute abdomen.^{1, 2} The etiology of perforated gall bladder in this pediatric age group is idiopathic.³ pre-operative clinical examinations, and laboratory and radiological investigations are required for the establishment of diagnosis.⁴ The most common site of perforation is at the fundus.⁵ We are reporting a case of perforated gall bladder in a 15-day-old neonate who presented with jaundice and abdominal distension.

CASE REPORT

15 day-old neonate landed at pediatric surgical emergency having complaints of vomiting, abdominal distension, persistent jaundice since birth, and clay-colored stool for the last 4 days. On clinical examination, there was a non-tender, 3x2 cm abdominal soft mass palpable in the right upper abdomen. The rest of the systemic findings were unremarkable. Abdominal Sonography (USG) revealed hepatomegaly, common bile

duct dilatation (6mm dilation of intrahepatic channels), and moderate debris ascites were noted with suspicion of perforation in the posterior wall of the gall bladder. Liver function tests revealed raised total bilirubin level of 6.87 mg/dl, direct bilirubin of 3.41 mg/dl, and indirect bilirubin of 3.5 mg/dl which declined on subsequent labs to the following levels: Total bilirubin of 2.1 mg/dl and alkaline phosphatase 321 u/L A diagnosis of gall bladder perforation (GBP) was made and exploration was planned under general anesthesia. The abdomen was opened via the right subcostal approach. On exploration, there were 20 ml of bile, a perforated gall bladder near the fundus with the perforated area adherent to the undersurface of the liver (Fig.1).

Per-operative cholangiogram was performed which showed the normal passage of contrast into the small intestine (Fig.2). A sample of the gallbladder was sent for histopathology. Histopathological analysis of the gall bladder showed sheets of macrophages, histiocytes, lymphocytes, and plasma cells, congested blood vessels, and subserosal fibrosis. The postoperative course was uneventful and the Patient was discharged on the 4th

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postoperative day. The patient was without symptoms during the follow-up and had no jaundice.

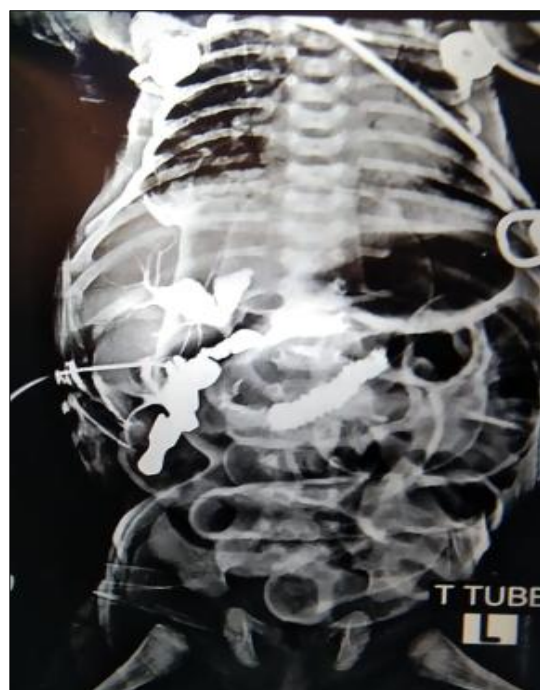


Figure 1: Per operative cholangiogram: Normal passage of contrast from the biliary tree into the small intestine (Pointed with arrow).



Figure 2a: Per operative cholangiogram: Normal passage of contrast from the biliary tree into the small intestine (Pointed with arrow). 2b. Gall bladder for Histopathology

DISCUSSION

Gallbladder perforation is rare and difficult to diagnose preoperatively. Only 9 cases are available in literature up till 20196. Regarding Spontaneous biliary perforation, more than 50 cases have been reported.⁷

The fundus of the gallbladder is the most distal part regarding blood supply; therefore, this part of the gallbladder is the most common site of perforation.^{13,14}

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The cause of GBP is not clear but acute cholecystitis and inflammation may lead to ischemia and necrosis of the gall bladder. Septic neonates develop abdominal distension. Group B hemolytic streptococcus has been the most common organism in such cases.⁸

Clinical features of gall bladder perforation are not specific, the majority of them present with abdominal distension and increasing jaundice. Our patient also presented with abdominal distension and jaundice since birth and clay-colored stool for the last 4 days. Surgeons should be aware of this rare condition while treating pediatric patients with acute abdomen. 9 Plain abdominal radiographs are not helpful, but ultrasound, CT scan, and radionuclide scan have an essential role in diagnosing gallbladder perforation.¹⁰

700-gram neonate was presented by Gul et al.¹¹ who had peritonitis due to perforation in the gallbladder neck. Sharma et al discussed an infant of 2 months of age who presented with a distended abdomen, jaundice, and clay color stool since birth and had a 2mm perforation in the gall bladder near the fundus, and Roux-en-Y hepaticojejunostomy was done. Another case of gallbladder perforation in a neonate has been reported by Ying-Yi Lu et al.¹³ The perforation was found at the fundus of the gallbladder which is considered the common site of perforation due to ischemic insult from sepsis.

Our patient was diagnosed of having spontaneous gallbladder perforation without any prenatal and post-natal history which can explain the etiology of the perforation.

Gall bladder perforation of spontaneous nature is rare and needs to be kept in the differential diagnosis in neonates who present with jaundice, abdominal distension, and acute abdomen

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