SPONTANEOUS PERFORATION OF THE BILE DUCT: A RARE COMPLICATION OF PREVIOUS SURGERY ON THE BILIARY TRACT: A CASE REPORT

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ABSTRACT

Spontaneous perforation of the common bile duct (CBD) is a rare condition encountered in infants and children due to a variety of causes. It is even rarer in adults with very few cases reported in literature. The patient may present with acute abdomen secondary to biliary peritonitis or more commonly the presentation may be insidious with progressive abdominal distention and jaundice. Prompt recognition and early surgical intervention is the only solution to cure.

Previous surgery on the biliary tract is an uncommon cause of spontaneous CBD perforation and very few cases have been reported till now. We present a case of biliary peritonitis secondary to CBD perforation in an adult female patient who had undergone laparoscopic cholecystectomy for cholelithiasis eight years back. The cause of the perforation was increased intraductal pressure due to distal obstruction of the CBD secondary to a benign fibrotic stricture.

KEY WORDS: Common Bile Duct (MeSH), Peritonitis (MeSH), Cholecystectomy, Laparoscopic (MeSH), Choledochostomy (MeSH).

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INTRODUCTION

Spontaneous perforation of the common bile duct (CBD) is a rare condition caused by congenital anomalies and distal biliary obstruction in infants & children. It is even rarer in adults with only a few cases reported till now. The causes in adults include; invasive procedures of biliary tree, severe cholangitis, bile duct obstruction by stone or tumor, pancreatic fluid refluxing up the CBD, congenital wall weakness and anomalous pancreatic-biliary junction.[1]

Early diagnosis and prompt surgical intervention is very necessary to decrease the mortality and morbidity associated with this condition. Acute abdomen secondary to biliary peritonitis, abdominal distension, jaundice & shock are common presenting features. Bile stained fluid on abdominal paracentesis, air fluid levels on abdominal X-ray & free fluid on ultrasound abdomen can help in confirming the diagnosis. Computed tomography (CT) scan, Magnetic resonance cholangiopancreatography (MRCP) and hydroxy iminodiacetic acid (HIDA) scan can also be done in cases where the diagnosis cannot be reached with routine investigations.[2]

We are reporting a case of spontaneous extra hepatic CBD perforation in a patient who had previous surgery on the biliary tract some years back.

CASE REPORT

A 65-year-old female patient presented to the surgical emergency with history of sudden onset generalized abdominal pain and distention, vomiting, constipation and yellowish discoloration of sclera and skin for the last five days. She had a history of laparoscopic cholecystectomy for gall stones eight years back with no other co-morbidities. On examination, she had a pulse rate of 100 beats per minute, blood pressure 130/80 mm of Hg, temperature 99°F. She was anemic and jaundiced. Her abdomen was tense and tender all over with no audible bowel sounds. Digital rectal examination was unremarkable. Her laboratory investigations showed low hemoglobin (Hb), raised total leukocyte count (TLC), bilirubin, alanine transaminase (ALT) and mildly raised alkaline phosphatase. Serum amylase was normal. X-ray abdomen had multiple air fluid levels and ultrasound abdomen showed free peritoneal fluid. A clinical impression of peritonitis with secondary paralytic ileus was made. The cause of peritonitis was not found clinically.

Exploratory laparotomy was performed after optimizing her condition with supportive treatment. She was given intravenous fluids, analgesia and preoperative antibiotics. Her operative findings were; biliary peritonitis with two liters of bile in the peritoneal cavity, a single 0.5×0.5 cm perforation on the anterior aspect of supra-duodenal part of CBD, adhesion and fibrosis from the previous surgery in the sub hepatic area, a patent and dilated proximal CBD above the perforation and a stenosed distal CBD due to fibrosis.

An end to side choledochoduodenostomy was done after taking biopsy. Thorough peritoneal lavage was done. Her post-operative recovery was uneventful. The abdominal drain remained minimal for 48-72 hours after which it was removed. The histopathology report was negative for malignancy consistent with our clinical impression of fibrosis. The patient was discharged after six

days. On her first follow up after one month she had complete recovery with no clinical signs of jaundice.

DISCUSSION

Perforation of any portion of extra or intra hepatic bile duct without any trauma or iatrogenic injury is known as spontaneous perforation of the bile duct. Extrahepatic bile duct perforation is more common than intrahepatic and among the extrahepatic; common bile duct is more affected. They are frequently encountered in infants as compared to adults. The exact mechanism is not clearly known. In literature, the commonest causes mentioned are; a calculus eroding the site of impaction, spasm of sphincter of Oddi, intramural infection, tumor obstruction leading to increase intraductal pressure, mural vessel infarction causing mural necrosis, ischemic compromise of CBD causing ductal wall perforation, previous biliary tract surgeries and idiopathic.[3]

Patient may present with acute abdomen having fever, vomiting, peritonitis, but the common presentation is insidious with progressive jaundice (because of the absorption of the bile from the peritoneal cavity), abdominal pain and distention, clay coloured stool and rarely with gastric outlet obstruction.[2,4] Abdominal paracentesis may show bilious aspirate and ultrasound abdomen may show free intraperitoneal fluid, normal intra/extra hepatic ducts and collapsed gall bladder. In doubtful cases CT, MRCP and HIDA scan can be performed which will show leaking radio-labeled material from CBD.[5]

Treatment is according to the cause and site of perforation. If common bile duct is patent and cause of perforation is a stone, then exploration of the CBD with stone removal, T- Tube drainage and cholecystectomy is the acceptable procedure. In case of distal CBD obstruction, biliary enteric bypass is a feasible and safe option. Primary repair of the CBD is not recommended in the presence of local inflammation.[1]

Perforation of the biliary tract without iatrogenic injury or trauma is a rare cause of bile peritonitis.[6] First series of spontaneous perforation of biliary tract was reported by McWilliams in 1912 in which most of the patients were having gall bladder perforation followed by CBD perforation.[7] After that many others including Lochan and Joypaul[8] and Mizutani et al[9] have also reported these perforations. Literature search reveals that very few cases of spontaneous perforation of CBD have been reported.[10]

In our case, there was previous history of surgery (laparoscopic cholecystectomy) on the biliary tract eight years back. We found perforation of the CBD with distal obstruction secondary to stricture and fibrosis. The cause of this fibrosis can be attributed to previous surgery. Fibrosis and stricture formation of the CBD is a known although rare complication of laparoscopic cholecystectomy in cases if the surgery is carried out in a setting of acute inflammation, if the clip is applied too near to the CBD, if the CBD is partially clipped, the clips become internalized later on and if there is aggressive dissection in the area of CBD making its wall ischemic. Perforation of the CBD secondary to stricture formation resulting from previous surgery is even a rarer entity reported very scarcely. This may be due to increased intraductal pressure that develops proximal to the stricture.

The operative findings were that of a benign common bile duct stricture. A biopsy was taken from the perforation site which later on came to be benign. As the distal CBD was blocked, that's why a bypass procedure was needed to restore the continuity of the biliary tract. An end to side choledochoduodenostomy with the first part of the duodenum was done. This is a safe option when there is distal CBD obstruction as mentioned in the literature.[1] Our patient tolerated the procedure well and she had an uneventful recovery.

Spontaneous perforation of the CBD is a rare clinical condition that is often missed clinically. Early diagnosis and prompt surgical intervention is the only solution to avoid mortality.

CONCLUSION

Spontaneous perforation of the CBD due to previous surgical intervention is extremely rare. It is easily missed, so early diagnosis and prompt surgical intervention leads to decrease morbidity and mortality.

REFERENCES

1. Khanna R, Agarwal N, Singh AK, Khanna S, Basu SP. Spontaneous common bile duct perforation presenting as acute abdomen. Indian J Surg 2010 Oct; 72(5): 407–8.
2. Rege SA, Lambe S, Sethi H, Gandhi A, Rohondia O. Spontaneous common bile duct perforation in adult: a case report and review. Int Surg 2002;87(2):81-2.
3. Marwah S, Sen J, Goyal A, Marwah N, Sharma JP. Spontaneous perforation of the common bile duct in an adult. Ann Saudi Med 2005;25(1):58-9.
4. Haller JO, Condon VR, Berdon WE, Oh KS, Price AP, Bowen A, et al. Spontaneous perforation of the common bile duct in children. Radiology 1989;172(3):621-4.
5. Goel P, Jain V, Manchanda V, Sengar M, Gupta CR, Mohta A. Spontaneous biliary perforations: an uncommon yet important entity in children. J Clin Diagn Res 2013;7(6):1201-6.
6. Upadhyaya VD, Kumar B, Singh M, Jaiswal S, Lal R, Gambhir S et al. Spontaneous biliary peritonitis: Is bed side diagnosis possible? Afr J Paediatr Surg 2013;10(2):112-6.
7. Chu CS. Spontaneous perforation of the common hepatic duct: report of seven cases. Surg Gastroenterol 1983;3(1):69-76.
8. Lochan R, Joypaul BV. Bile peritonitis due to intra-hepatic bile duct rupture. World J Gastroenterol 2005;11(42):6728-9.
9. Mizutani S, Yagi A, Watanabe M, Maejima K, KomineO, Yoshino M, et al. T tube drainage for spontaneous perforation of the extrahepatic bile duct. Med Sci Monit 2010; 17(1):CS8-11.
10. Malik HS, Cheema HA, Fayyaz Z, Hashmi MA, Parkash A, Waheed N, et al. Spontaneous perforation of bile duct, clinical presentation, laboratory work up, treatment and outcome. J Ayub Medical College Abbottabad 2016;28(3):518-22.

CONFLICT OF INTEREST

Authors declared no conflict of interest

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