Spontaneous common bile duct perforation due to periampullary growth

INTRODUCTION

Spontaneous common bile duct perforation is a complication rarely seen in infants and children due to congenital anomalies.[1-3] Occasionally, it has been reported in adults following trauma or invasive procedures around the common bile duct.

In children, it is due to congenital weakness of the common bile duct (CBD), distal obstruction and pancreatic reflex.[4] But, in adults, it is due to high intraductal pressure due to tumor obstruction of ampulla, calculus, pregnancy and necrosis of duct wall secondary to vascular thrombosis.[5]

In the pre-operative period, most of the common bile duct perforations are diagnosed as duodenal perforation or gall bladder perforation. Very rarely, these are diagnosed as common bile duct perforation. For proper diagnosis, a high index of suspicion is needed.

CASE REPORT

A 55-year-old male patient was admitted with complaints of abdominal pain for 10 days duration, nausea and vomiting for 5 days duration. History of not passing stool and flatus for 3 days duration was present. History of fever for 3 days duration was also noted. There was a history of loss of appetite and lose of weight. No history of previous surgery or surgical intervention was noted, and there was no history of prolonged drug intake.

On examination, the patient was conscious, oriented, febrile and icteric, and tachycardia and tachypnea were present. Pulse rate - 102/min, BP - 90/60 mmHg. Abdominal examinations showed distended abdomen, not moving with respiration and no sinus, scar or dilated veins. There was no visible peristalsis. Hernial orifices and external genitalia were normal. On palpation, guarding and rigidity were present. On auscultation, bowel sound was absent.

Investigations showed anemia and leukocytosis and liver function test showed hyperbilirubinemia with elevated alkaline phosphatase. There were mild elevations on amylase and lipase levels. Erect abdominal X-rays showed dilated transverse colon with no free gas under diaphragm. Computed tomography of the abdomen showed free fluid. Abdominal paracentesis showed biliary fluid aspirate.

A pre-operative diagnosis of duodenal perforation was made and laparotomy was performed. The intra-operative findings were biliary fluid with pus flacks and distended gall bladder with no evidence of choledochitis or gall bladder perforation. The stomach, duodenum and pancreas were normal. A single 2 × 2 cm perforation was noted at the anterior surface of the common bile duct, 1 cm distal to the...
cystic duct and hepatic duct confluence [Figure 1]. The common bile duct was dilated. The periampullary region was thickened with growth. The peritoneal cavity was irrigated with normal saline and the common bile duct was closed by inserting a T tube through the site of perforation [Figure 2]. The abdomen was closed in layers after keeping the drain tube. Post-operative recovery was uneventful.

DISCUSSION

Spontaneous perforations of common bile duct are a rare entity in adults.[1,6] Perforation is always found at the junction of the cystic duct and common bile duct, which supports the suggestion of an area of developmental weakness.[2] Obstruction with inspissated bile has been demonstrated in several of the affected infants, and is the likely cause of high intraluminal pressure.[4]

Perforation of the intrahepatic bile duct is very rare compared with the extrahepatic bile duct. Therefore, extrahepatic bile duct perforations were more common than intrahepatic bile duct perforations. The relatively high osmotic pressure of the escaping bile leads to fluid shift from various peritoneal and intestinal tissue into the peritoneal cavity.

Presentation of common bile duct perforation more or less mimics duodenal perforation or gallbladder perforation. Laboratory investigations may not be conclusive for common bile duct perforations. Most of the time, the patient shows anemia and leukocytosis due to peritonitis. The liver function test most of the time is normal or mild derangements are found. The exception is bilirubin with alkaline phosphatase, which shows elevation on liver function test.

Presence of bile in the peritoneal cavity with normal gall bladder, stomach, duodenum and pancreas may give a clue of common bile duct perforation. The recommended treatment for common bile duct perforations is biliary decompression with T tube drainage of the common bile duct.[7,8] Primary suture repair of the common bile duct is considered unnecessary and even hazardous due to local inflammation and leak.

CONCLUSION

Common bile duct perforations were a very rare entity. Even in bile duct perforations, intrahepatic perforation is very rare compared with extrahepatic perforations because embryogenesis perforation is most common at the cystic duct and hepatic confluence. Based on the presentations, it is very difficult to diagnose common bile duct perforation in acute situations. Most of the time, it is misdiagnosed. Investigations may not be conclusive. Presence of bile in the abdominal paracentesis with mild derangement of liver function test will be present in common bile duct perforation. Presence of bile in the peritoneal cavity with normal gall bladder, stomach, duodenum and pancreas warrant a search of common bile duct perforation. It is always better to insert a T tube at the perforation site with closure of perforation rather than primary closure of perforation.

REFERENCES


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