Ruptured Choledochal Cyst as a Cause of Peritonitis

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Introduction

Choledochal cyst usually presents as pain or mass in the abdomen or jaundice; these occurring either independently or together[1]. Its first manifestation as peritonitis due to rupture is a rare phenomenon[2]. Pre-operative diagnosis is difficult. External drainage of the cyst, as a temporary measure, is useful in emergency and more extensive procedures are done after an interval[2].

Case Report

On 18th August 1991, a seven years old boy was brought to the emergency department of Lahore General Hospital, Lahore. He had had attack of central abdominal pain five days back, followed by frequent vomiting absolute constipation and abdominal distension. He had been a healthy child till that time. On examination, he was found restless, pale, dehyderated, had pulse 140/minute, respiration 40/minute and temperature 10 1°F. He had no jaundice. His abdomen was distended, diffusely tender and guarded, the last two features more noticeable in the right half. His blood profile was as follows: Haemoglobin 12gm/dl, white cclii count 13500/mm^3, urea 18mg/di, sodium 134 mmol/L, potassium 4.0 mmol/L, bilirubin 1.5 mg/dl, alkaline phosphatase 358 U/L, SGPT 58 U/L, SGOT 15 U/L. Urinalysis was normal. Plain x-ray of the abdomen revealed scattered gas-filled bowel loops with areas of hazziness in between, suggestive of fluid collection. No free air was seen. Presumptive diagnosis was peritonitis, with the underlying cause being unascertained. The patient was prepared for operation. At laparotomy, the pentoneal cavity was found to contain large amount of pale coloured fluid. During the search for the causative lesion, a perforation of about 1 cm with ragged margins was seen on the anterior aspect of a choledochal cyst. Through this perforation, the fluid was continuously pouring out. The cyst was involving superaduodenal and retroduodenal parts of the common bile duct. The fluid was mopped out of the peritoneal cavity. However, due to the un favourable circumstances, cyst excision or cystoenterostomy was not considered safe. So simple external drainage was decided as a temporizing measure. For this purpose, a T-tube was put in the cyst through the perforation. The abdomen was closed after placing another drain in the sub-hepatic area. The patient made smooth post-operative recovery. Biliary fluid, however, continued to drain through the T-tube, about 600ml/24 hours in amount, till the second operation was performed three months later. Post-operative T-tube cholan giography showed type-I choledochal cyst of 4x5 cm size (Figure).

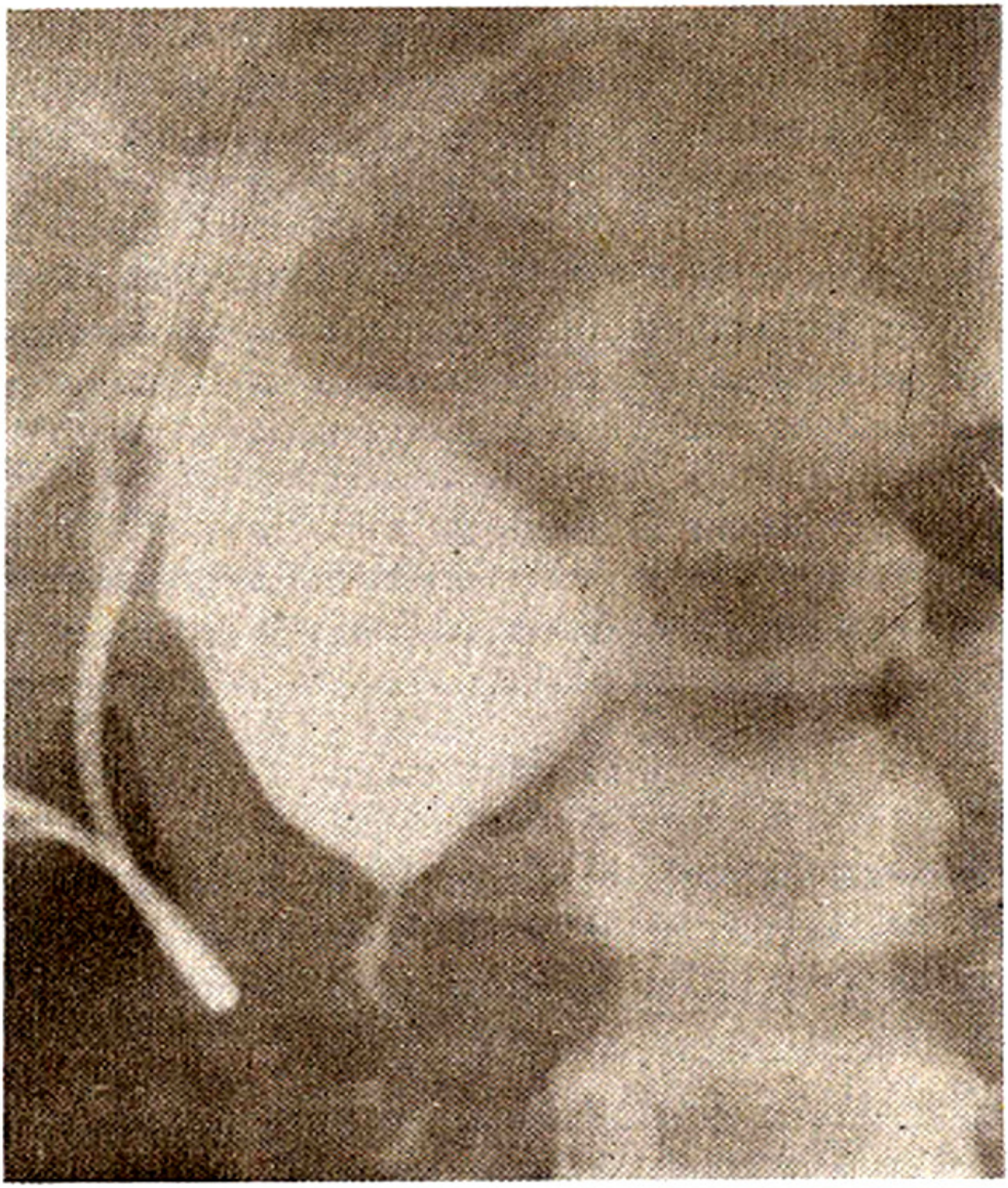

Figure 1. Post Operative T-tube Cholangiogram showing type I choledochal cyst.

At this stage, ultrasonographic assessment of the cyst was also done. During the subsequent operation, cyst excision, though originally planned, was not found to be technically possible due to extensive adhesions around, a sequelae of previous peritonitis. Subtotal excision of the cyst was thus resorted to and choledocho-jejunostomy was performed ensuring a wide stoma. The child recovered well after this

operation too. He was discharged from the hospital on 10th post-operative day with special instructions for regular follow-up. The child was without any problem till his last visit to the hospital, six months after the second operation.

Discussion

The classical clinical presentation of a choledochal cyst is the triad of abdominal pain, jaundice and mass in the right hypochondrium. The triad, however, is present in very few patients; Yamaguchi found it only in 151 of 1,433 patients[3]. Much more common is the presence of one or two of the features. Rupture of the cyst leading to binary peritonitis is quite rarely the first mode of presentation[2-4]. The present case is further exceptional that even five days after the catastrophy, the child did not develop jaundice. Little is known about the mechanism of rupture. It has no relation with the size of the cyst[5]. In some cases, it occurred following trauma[6]. It is also known to occur in pregnancy and during child birth[5]. In the majority, however, it occurs spontaneously. Extra peritoneal rupture has also been reported[2]. Ruptured choledochal cyst might be suspected if the patient shows features of binary peritonitis without a clue to its underlying cause. Ultrasound and CT scan can provide confirmatory evidence. These should thus be employed more frequently in cases of peritonitis where its cause could not be otherwise ascertained. For this it is necessary that these investigations are at hand in emergency to avoid delay in the treatment. As the cyst collapses after rupture, it may be difficult to recognise it at operation. External drainage of the cyst in an accepted temporizing procedure in emergency situation[2-7]. However, there has been considerable debate over the form of definite treatment, that is, whether to excise the cyst or perform internal drainage. Presently, cyst excision is considered ideal as it removes the potential sources of carcinoma, a long term risk, and minimizes the chances of an astomotic stricture which are quite high with cystoenterostomy. Techniques have been evolved to facilitate excision where adhesions make it difficult, such as, leaving behind the outer layer or the posterior wall of the cyst[5,7,8]. Even then, excision does carry a greater risk of injury to important adjacent structures (portal vein, hepatic artery, pancreas in particular). Also, this demanding procedure does not completely safeguards against late problems of cholangitis, binary calculi, and even carcinoma which can arise in the remaining parts of bile ducts[5-9]. It has further been observed that two third of the patients treated without cyst excision live a completely healthy life afterwards[2]. Thus cystoenterostomy still enjoys a place in the treatment especially if the excision is deemed hazardous[2-5].

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