

Case report

Retained T-tube After CBD Exploration extracted Laparoscopically: A Case Report

Abstract:

Introduction: T-tube has long been used to drain the biliary tract after choledochotomy. It is generally removed 10-14 days after the surgery by means of gentle traction. Here we report a rare cause of retained T-tube due to plastering and peritonialisation of the tube to the parietal wall.

Case Report: A 45 year old lady with choledocholithiasis was planned for common bile duct (CBD) exploration and stone extraction after a failed ERCP. After the procedure a T-tube drain was placed in the CBD. On post operative day 21, the tube was unable to be removed despite traction. Patient was planned for a diagnostic laparoscopy which revealed that the T-tube was plastered and peritonialised completely along its tract to the parietal wall causing its retention. The tube was dissected from the sheath formed around and gently extracted uneventfully. The patient was later doing fine on regular follow up.

Conclusion: Although T-tube placement after choledochotomy is a common surgical practice, the complications of retained T-tube is less understood. Defining the various causes of retained T-tube helps in handling such complications.

Key Words: T-tube, CBD Exploration, laparoscopy, cholecystectomy, choledocholithiasis

Introduction

Insertion of a T-tube post choledochotomy has been a traditional method which helps in controlled biliary drainage, prevention of biliary leak, promoting healing of rent in the common bile duct (CBD) and providing a route for radiological evaluation of biliary tree [1]. There are many complications associated with the use of T-tube such as, cholangitis, dyselectrolytemia, displacement of the tube and bile leak. There have been a few reported cases of retained fragment of T-tube. Here we present a rare cause of retained T-tube due to plastering and peritonialisation of the tube to the parietal wall managed laparoscopically.

Case report:

A 45 year old lady with no comorbidities, presented with obstructive jaundice and intermittent right upper abdominal pain. A thorough work up of the patient revealed conjugated hyperbilirubinemia with total and direct bilirubin of 10.3 and 8.2 mg/dl respectively. Alkaline phosphatase (ALP) was 2150 IU/l. Ultrasonography of the abdomen revealed mild hepatomegaly, dilated intrahepatic biliary radicles and CBD of 17 mm.

Magnetic resonance cholangiopancreatography (MRCP) revealed a 14 mm signal void area in distal CBD (16 mm dilated) with smooth tapering at lower end.

After initial stabilisation of the patient, Endoscopic retrograde cholangiopancreatography (ERCP) was attempted for stone retrieval, but was failed. Patient was then planned for laparoscopic cholecystectomy with CBD exploration and T-tube placement. Intraoperatively, the stone was extracted via a choledochotomy and a Kehr's T-tube size 14 Fr was placed after the CBD exploration. The post operative period was uneventful till day 10, on which a T-tube cholangiogram was performed with showed no distal obstruction and no bile leak. Subsequently patient was planned for the removal of the T-tube. Surprisingly, the tube did not come out with gentle traction on repeated attempts. She was then planned for diagnostic laparoscopy which showed that the T-tube was plastered and peritonialised completely along its tract to the parietal wall causing its retention. The tube tract was dissected with Maryland laparoscopic dissector using monopolar energy and extracted successfully as shown in figure 1. The patient then recovered uneventfully and is on regular follow up.

Figure 1: T-tube extract laparoscopically by dissecting its tract



Discussion:

T-tube biliary drainage after CBD exploration is still considered a useful method to prevent dreaded complications of bile leak after choledochotomy. This external biliary diversion is done to allow spasm and edema of the CBD and sphincter of Oddi to settle, to obtain postoperative cholangiography and to develop a tract along which Percutaneous removal of retained stones can be achieved [2]. In complicated surgeries of the CBD, use of T-tube may sometimes be used as a bail-out procedure. However, the use of these T-tubes comes with complications including cholangitis, sepsis, dyselectrolytemia, bile leak and peritonitis, tube

dislodgement [3]. Delayed complications such as biliary fistula and stricture may also occur [4].

T-tube is usually removed after 14th postoperative day, once the distal patency is established. The method of removal involves cutting the fixation suture and pulling the tube with gentle traction. Here we report a rare case of fixed T-tube which could not be removed despite repeated traction. It was found to be completely plastered and peritonialised to the anterior abdominal wall causing its retention, which had to be dissected and removed laparoscopically. Although there have been cases of retained T-tube fragment, there is none to a few cases of plastering of T-tube within requiring re-laparoscopy for removal.

References:

- 1) Rajput D, Patnaik I, Shasheendran S, Kumar BKP, Gupta A. Fractured T Tube Fragment in Common Bile Duct during Retrieval: An Unforeseen Mishap. *Surg J (N Y)*. 2021 Sep 14;7(3):e251-e254. doi: 10.1055/s-0041-1735643. PMID: 34541317; PMCID: PMC8440054.
- 2) Strong RW. Complications of biliary T-tubes. *ANZ J Surg*. 2002;72:171–172. doi: 10.1046/j.1445-2197.2002.02341.x.
- 3) Wills VL, Gibson K, Karihaloot C, Jorgensen JO. Complications of biliary T-tubes after choledochotomy. *ANZ J Surg*. 2002;72:177–180. doi: 10.1046/j.1445-2197.2002.02308.x.
- 4) Sharma T, Farah KF. A 36-Year Retained T-tube Fragment Presenting with Cholangitis. *Gastroenterology Res*. 2009 Apr;2(2):126-127. doi: 10.4021/gr2009.04.1285. Epub 2009 Mar 20. PMID: 27956967; PMCID: PMC5139831.