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Symptomatic Cystic Duct Stump Lithiasis 21 Years after Cholecystectomy

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Abstract- **Cystic duct stump or remnant gall bladder is, if not always, one of the important cause of postcholecystectomy symptoms. In laparoscopic era incidence of leaving long cystic duct stump has increased. Also difficult gall bladder surgeries often end up with incomplete removal of gall bladder. Magnetic resonance cholangiogram is an optimal diagnostic modality. Treatment is to remove remnant cystic duct stump either by laparoscopy or by open method. We are reporting a case of symptomatic cystic duct stump with a very late presentation.**

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I. Introduction

Difficult dissection in presence of severe inflammation or dense adhesions during surgery for symptomatic gall stone disease sometime ends up with incomplete cholecystectomy. Long cystic duct remnant is more frequently encountered in the laparoscopic approach, where the cystic duct is usually divided close to the gallbladder to avoid iatrogenic common bile duct injury[1]. Cystic duct stump lithiasis is found in 10-40% of patients with postcholecystectomy symptoms particularly in laparoscopic era[2]. We report a case presenting with symptomatic cystic duct lithiasis 21 years after open cholecystectomy.

II. Case Report

A 72 years old male patient with good performance status and no known co-morbid conditions came to us with complaint of recurrent dull aching pain in right upper abdomen for 2 months. Frequency of pain was 2 to 4 times per month. There was no radiation of pain. Each pain episode persisted for 1-2 hours. It did not require any hospital admission, but oral analgesics. It was associated with nausea but not with vomiting. It was not associated with fever, jaundice, anorexia or weight loss. History revealed that the patient had open cholecystectomy 21 years back (1993) for symptomatic gall stone disease in some other hospital. Written details of the surgery or histopathology reports were not available. It was a difficult procedure as told by the operating surgeon to the patient. Gall bladder and stones were shown to the patient's relatives at the end of the surgery. One drain had been kept during surgery, which was draining greenish fluid of maximum 200 ml /day for few days. Drain output gradually came down and the drain was taken out around 2 weeks after surgery. Patient was discharged after the drain removal. Since then the patient had no problem till two months back when he suffered from recurrent pain. Physical examinations of the patient were essentially normal. There was a 10 cm healthy right subcostal surgical scar with a 1.5 cm drain site scar just lateral to it. There was no palpable mass or organomegaly. No free fluid was detected. Routine blood investigations showed haemoglobin of 12.3 gm%, total leukocyte count of 7600/cumm, platelet count of 232000/cumm, urea of 23 mg/dl, creatinine of 0.9 mg/dl, bilirubin total of 0.8 mg/dl, ALT of 34 U/Lit, AST of 27 U/Lit, alkaline phosphatase of 69 U/Lit, total protein of 7.4 gm/dl and albumin of 4 gm/dl. Ultrasound abdomen revealed a 3 x 2 cm cystic lesion in gall bladder fossa with stones iside. Liver echotexture was normal. Intrahepatic or extrahepatic biliary channels were not dilated. Doppler ultrasound helped to elicit normal portal venous and hepatic arterial flow and pattern. Magnetic resonance cholangiopancreatogram (MRCP) revealed a 3 x 2 cm dilated remnant cystic duct stump with stones inside and normal intrahepatic and extrahepatic biliary channels (**Fig - 1**). Surgical management was planned and open exploration with completion cholecystectomy was performed. Abdomen was opened through the previous right subcostal incision. Dense right subhepatic and suprahepatic adhesions were divided. There was a 4 cm cystic duct stump with dilated distal part, densely adhered to liver bed (**Fig - 2**). Junction of cystic duct and common hepatic duct was dissected (**Fig - 3**). No cystic artery was found. Cystic duct was divided close to bile duct and transfixed. Remnant cystic duct stump containing two 5 mm calculi was dissected out of liver bed (**Fig – 4**). 28 french tube drain was placed in right subhepatic space. Abdomen was closed en masse. Postoperative period was uneventful. Patient was discharged on 3rd post operative day after removing drain. Histopathology revealed features of chronic inflammation in the resected specimen. Patient is now

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absolutely symptom free since this operation performed one year back.

Figure 1 : MRCP finding of symptomatic cystic duct stump stone

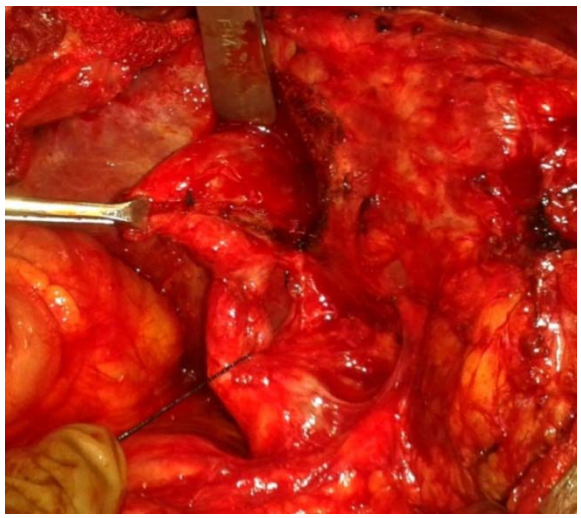

Figure 2 : Dilated cystic duct stump, operative finding

Figure 3 : Cystic duct stump separated from liver, operative finding

Figure 4 : Resected specimen

III. Discussion

Around 5% of postcholecystectomy patients present with severe right upper abdominal pain similar to symptomatic gall stone disease[3]. Causes are retained or recurrent bile duct stone, biliary stricture, cystic neuroma, papillary stenosis, sphincter of Oddi dyskinesia, cystic duct stump lithiasis or remnant gall bladder. These are collectively called postcholecystectomy symptoms and can present from two days to 25 years after surgery[1]. Cystic duct remnant is defined as residual cystic duct of more than 1 cm in length with or without presence of stones in a postcholecystectomy patient. It is more common in the setting of acute cholecystitis where to avoid bile duct injury cystic duct is often divided very near to gall bladder or some length of gall bladder is left in situ in the presence of severe inflammation in Calot's triangle [4, 5]. Also in laparoscopic era, division of cystic duct close to bile duct is often avoided to prevent bile duct injury. This situation can be prevented by correctly identifying cystic duct and bile duct junction and safely dividing the cystic duct keeping the cystic duct length less than 1 cm. Symptomatic cystic duct lithiasis usually presents with right-upper-quadrant pain and dyspepsia without jaundice [1].

Ultrasound abdomen is often the initial investigation but it can miss the cause of postcholecystectomy pain in nearly 50% of cases when compared to cholangiogram. MRCP has sensitivity between 85% to 100% in detecting biliary anatomy and stones. Endoscopic retrograde cholangiogram (ERC) is similarly effective tool, but exclusively used therapeutically when indicated [1]. Sensitivity and specificity of endoscopic ultrasound (EUS) is nearly similar to MRCP. EUS is particularly helpful to avoid unnecessary biliary canulation in suspicious cases, if done prior to ERC. Diagnosis of remnant cystic duct stump is considered if a gall bladder like structure is detected in a patient during radiological evaluation of post-cholecystectomy symptoms.

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Treatment is surgical removal of cystic duct stump either by laparoscopy or by open method. Severe postoperative adhesions often require open procedure, though laparoscopic removal is feasible [5, 6, 7].

Here the patient had a symptomatic cystic duct stump lithiasis 21 years after a difficult cholecystectomy which had probably been complicated by postoperative biliary leak. Anticipating severe postoperative adhesions we opted for open completion cholecystectomy and thus justified our approach according to our findings.

IV. Conclusions

Symptomatic cystic duct stump lithiasis after cholecystectomy is an important cause of postcholecystectomy symptoms and can appear after variable period following gall bladder surgery. Ultrasound, EUS and MRCP can establish the diagnosis. Redo completion cholecystectomy either by laparoscopy or by open exploration, though often difficult, relieves the problem. Right upper quadrant abdominal pain after any period of time following cholecystectomy particularly with normal liver function tests, should be investigated accordingly to rule out this curable condition.

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