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Case Report

Forgotten Biliary Stent: A Case Report

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ABSTRACT

Endoscopic sphincterotomy and stone extraction is the widely accepted treatment modality for common bile duct stones and this procedure can clear the bile ducts in 85% to 90% of patients. Endoscopic insertion of biliary endoprosthesis has been proposed as an alternative for frail, elderly patients or in those with high surgical risk. Biliary stent plastic is kept for temporary relief of biliary obstruction.It is to be kept for 3 weeks to 3 months maximum, in this patient biliary stent was kept for 5 years which is the longest period a stent remained in biliary tree. We recommend for all ERCP units provide a stent registry system that the stents placed for various therapeutic procedures are not forgotten both by the patient as well as the physician. There sould be a deadline for biliary stents in registry system for each patient.

INTRODUCTION

Endoscopic sphincterotomy and stone extraction is the widely accepted treatment modality for common bile duct stones and this procedure can clear the bile ducts in 85% to 90% of patients [1]. Endoscopic insertion of biliary endoprosthesis has been proposed as an alternative for frail, elderly patients or in those with high surgical risk [1-7]. Endoprosthesis is also accepted in patients where we want ot remove CBD stones and subsequently advise patients for cholecystectomy in case there are stones in the gall bladder also. It prevents the impaction of stones at ampulla and allows free flow of bile in the duodenum till the gall bladder is taken out. The major aim of this therapeutic option is directed toward prevention of stone impaction at the ampulla and a subsequent life-threatening complication, cholangitis.

The biliary stenting is performed either with plastic or metal stents, studies recommending their replacement after 3-6 months [8-11], in order to avoid complications such as occlusion (25%), migration (6%) of the stent or cholangitis [11]. Common bile duct obstruction by a foreign body is a rare cause of obstructive jaundice, especially when it occurs due to a biliary stent on which de novo gallstones have formed. There are many studies about the biliary stents, however there is a little information about the long-term stayed or forgotten biliary stents except a few case reports. We are reporting a rare case of forgotten/ommitted biliary stent (more than five years, longest ever forgotten biliary stent in the CBD)

HISTORY

60 year old female, post menopausal, presented 3 day history of severe colicky pain. There was no history of fever, vomiting, jaundice, diarrhoea.

Past history: In 2010, patient presented with choleangitis in a local hospital. Ultrasound revealed cholelithiasis with choledocholithiasis. ERCP was done, stone was extracted and a [plastic biliary stent was put in. Patient recovered and improved.

After that episode, She was advised, cholecystectomy and removal of stent. She was dated for surgery after 4 weeks.

There were no symptoms of cholecystitits and endoprosthesis till she was persued by the family members to undergo cholecystectomy and it was only in April 2015, after lapse of 5 years that she underwent Laproscopic cholecystectomy.

She was alright for two and a half months after which she again developed severe colicky abdominal pain and was admitted on 04 May 2015 in PIMS Jalandhar. There was no history of jaundice, fever, hypotension, mental disturbance.

Her investigations revealed:

Blood Group	'O' positive
Haemoglobin	9.8%
Total leukocyte count	10900
Differential leukocyte count	74/22/03/01
Platelet	3.66
Kidney function test	33/1.0 mg/dL
Sodium /Potassium	140/4.6 mEq/dL
Calcium /Phosphorous	9.1/3.0 mg/dL
Total Bilirubin	0.4 mg/dL
Direct Bilirubin	0.1 mg/dL
Total Proteins	6.8 g/dL
Albumin	3.7 g/dL
SGOT/SGPT	15/11 U/L
Amylase/Lipase	51/31 U/L
Alkaline phosphatase level test	113 U/L
Gamma-glutamyl transferase	36 U/L
Erythrocyte sedimentation rate	70 mm/1st Hour
HIV, HBs Ag and HCV marker	Negative
Typhoid marker	Negative

Ultrasound abdomen did not show any dilatation of intrahepatic ducts. It did not show any foreign object in CBD. It was decided to take the patient for endoscopy to look for ulcer disease. It was on endoscopy that a stent was found and patient and his attendants revealed the history of putting a stent in 2010 in CBD, and records showing removal of 3 stones from CBD and there were 2 stones in gall bladder with normal wall thickness, way back in 2010. She underwent endoscopy for removal of stone, which was successfully removed and patient got relief of pain and symptoms and was discharged next day.

DISCUSSION

With the progress of the ERCP techniques, the treatment of CBD stones has become safer and easier, so the indication of EST and stone extraction has broadened quickly. When endoscopic removal of CBD duct stone fails, insertion of endoprosthesis is indicated, and moreover biliary stents are indicated in cholelithiasis with choledocholithiasis wherein CBD is cleared of stones and in order to prevent slipping/impaction of stones which travel from gall bladder lumen to CBD and a time period of 4-6 weeks is given or immediate cholecystectomy can be done depending on the situation. And stenting is done to prevent the slippage of stone and prevent choleangitis which has high morbidity and mortality in order to facilitate bile drainage and to prevent stone impaction or cholangitis, before a subsequent surgical intervention or a second attempt for stone extraction [13, 14].

The early outcome, including good drainage and low complication rate has been well established, but the late outcome has remained uncertain. Most reports revealed that the success rate of endoscopic biliary stenting was nearly 100% and early morbidity is low and can be controlled well [2, 15-17].

Management of forgotten biliary endoprosthesis can be done by ERCP or by surgical methods (choledocotomy).

The major disadvantage of this technique is the clogging of the endoprosthesis, which happens only a few days or several months later, and makes necessary frequent endoprosthesis exchanges to prevent cholangitis. We know that the sphincter of Oddi acts as a mechanical barrier, preventing the regression of the duodenal contents. The breakdown of this barrier with sphincterotomy or transpapillary insertion of an endoprosthesis results in microbial infection of the bile by ascending infection [18-20]. Additionally the presence of a foreign body in the biliary system has been proven to facilitate bacterial adhesion and biofilm formation [19]. However, when endoprostheses are used in non-extractablecholedocholithiasis, they can remain in place for longer periods than the

required patency of endoprosthesis. It may be considered that the endoprosthesis does not serve as the sole conduit for the bile duct flow when used for choledocholithiasis [2, 20].

As expected, there remains a lumen in the common bile duct after placement of endoprosthesis alongside the stones, and this lumen may provide a pathway for bile flow even when the endoprostheses are completely obstructed.

Dislodgment of an endoprosthesis can expose a patient to the danger of stone impaction and cholangitis. The main role of the stent in our patient was free bile flow, if bile flow stops stent act as a nidus for stone and bacteria. However, cholangitis can easily be controlled by antibiotic therapy and the insertion of a new biliary stent.

Katsinelos et al. [21]. It was noted that none of the patients with gallbladder in situ had developed gallbladder symptoms.

Dobronte et al. [22] reported that the average duration of symptom relief after biliary stenting was 22 months. The mean duration of the patency of the stent was about 12 months and the rate of late complications such as stent occlusion and cholangitis was 33.4-40.8% [15, 23-25]. For patients who cannot endure the process of definitive treatment, the biliary stent.

Most of the patients with stents in situ remained asymptomatic. Cholangitis is the most common complication after biliary stenting. Due to its recurrent character, the risk of liver abscesses, secondary sclerosing cholangitis and biliary cirrhosis is increased. It also may develop as an icterouremigenic cholangitis that is potentially fatal. In case of CBD stenosis, the healing process may take a while. Therefore, in young patients or in patients with repeated episodes of cholangitis, the surgical biliodigestive reconstruction surgery (choledochojejunal anastomosis with a Roux loop) is preferred [26-28]. In our patient 1 we preferred Roux-en Y hepaticojejunostomy because of intrahepatic multiple stones and recurrent episodes of cholangitis. Also in patient 2 because of recurrent attacks of cholangitis we performed choledochoduodenostomy.

Bartos et al. [29] presented that in the case of their patient, the endoscopic stenting solved the iatrogenic complication that occurred after cholecystectomy. However, inadequate follow up of the postoperative and postendoscopic period led finally to the need for another surgical procedure. Without this surgical procedure, the life of the patient could have been jeopardized by complications secondary to biliary obstruction: liver cirrhosis, liver failure. In their patient, the lithogenic process was initiated on the remnant biliary stent that had not been replaced or extracted and caused repeated episodes of cholangitis.

In conclusion, endoscopic placement of the endoprosthesis is a simple and safe method, butafter insertion of endoprosthesis, all patients should be informed to be having biliary stents and the possibility of complications related to long-term endoprosthesis placement and were requested to contact to ERCP unit if symptoms suggestive of cholangitis. As the stent may get impacted within the stone, an endoscopic procedure may not be successful in such cases, especially with a large stentolith, mandating surgical removal. Biliary stents staying more than 3 years and dislodgement of stent to the CBD are major risk factors for forgotten or omitted stents in our experience. Such cases are treated mostly by surgical intervention.

We recommend for all ERCP units provide a stent registry system that the stents placed for various therapeutic procedures are not forgotten both by the patient as well as the physician. There should be a deadline for biliary stents in registry system for each patient.

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