‘STENTOLITH’: A Rare Cause Of Obstructive Jaundice

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INTRODUCTION
Endoscopic sphincterotomy and CBD stenting is the widely accepted treatment modality for choledocholithiasis. Biliary stenting is performed either with plastic or metal stents. The mean duration of patency of stent is about 12 months²,³. The studies recommend replacement or removal of stent at least by 3-6 months in order to avoid complications such as occlusion or migration of stent or cholangitis². Common Bile Duct obstruction by a foreign body such as endoclips (most common), silk ligature, Dormia basket, worms such as Ascariasis, fish bone is a rare cause of obstructive jaundice especially when it occurs due to a biliary stent on which de novo stones have formed¹. Hereby we report a case of obstructive jaundice due to de novo choledocholithiasis secondary to forgotten CBD stent.

CASE REPORT
A 45 years old female patient presented with chronic abdominal pain and gradually progressive jaundice since 1 year associated with pruritus and clay coloured stools since 3 months. She had undergone open cholecystectomy 10 years back and an oral endoscopic procedure 5 years back. Patient was not aware of any stenting procedure done in the past. On Examination patient was deeply icteric with scratch marks present over the body. Abdominal Examination was grossly normal. Patient was admitted and investigated. Total Leucocyte Count was 15500/mm³, Alk. Phosphatase 1712 U/L, ALT 530 U/L, Bilirubin Total 5.1 mg/dl, Direct 4.9 mg/dl. X ray abdomen standing revealed linear opacity in the right upper quadrant corresponding to calcified forgotten CBD stent. Ultrasonography of abdomen revealed dilated CBD with 2.3 cm at porta and 0.8 cm at distal part along with CBD stent seen in situ. Mid and distal part filled with soft sludge/ soft calculus. Central and peripheral IHBR were found dilated. Gall bladder was absent. On CT abdomen, CBD was found dilated with 22 mm at porta, 25 mm at mid part and 14 mm at distal part. CBD stent was present in-situ with proximal end at porta and distal end opening in duodenal loop. 3.8× 1.9× 1.8 cm³ soft calculus present in mid and distal CBD with dilated central and peripheral IHBR. Patient was further explored with a right para-median incision. Dense adhesions were found at gall bladder fossa. CBD and visible portions of hepatic ducts were found grossly dilated. Bile was aspirated from the dilated biliary system and sent for culture and antibiotic sensitivity. Retained CBD stent along with the soft calculus in multiple fragments was removed. Diamond shaped
choledochoduodenostomy was made using PDS 3-0. Bile aspirated from the dilated biliary system was positive for Klebsiella Pneumoniae which was sensitive to Piperacillin+Tazobactum and Amikacin. Patient had uneventful recovery and discharged on 7th post-operative day with: TLC 8800/ mm$^3$, ALP 572 U/L, ALT 122 U/L, Bilirubin Total 2.2 mg/dl, Direct 1.8mg/dl.

**Figure 1**: Retained CBD stent along with fragments of secondary CBD calculus removed.

**DISCUSSION**

Endoprosthesis facilitates bile drainage and prevents stone impaction. But if forgotten one of the major complication is its clogging and obstruction. Sphincter of Oddi acts as a mechanical barrier. Breakdown of this barrier with Sphincterotomy or transpapillary insertion of an endoprosthesis results in microbial infection of bile by ascending infection. Foreign body in biliary system facilitates bacterial adhesion and biofilm formation. It also impairs local host defence and response mechanism.

![Diagram of biliary system with infection and obstruction]

In this case forgotten CBD stent acted as the nidus and with superadded infection it lead to de novo choledocholithiasis for which the term stentolith has been coined.

**CONCLUSION**

All patients with biliary stents must be informed about it and also related complications of long term endoprosthesis in situ. They should be instructed to contact the ERCP unit if symptoms of cholangitis develop. Setting up of a computerized ‘Stent Registry System’ under direct supervision of the surgeon is recommended so that the stents placed for various therapeutic procedures are not forgotten both by the patient as well as the surgeon. There must be a deadline for biliary stents in registry system for each patient. Patient education for timely follow-up and removal of the stents is the key to avoid potentially lethal complications.

**REFERENCES**