Forgotten CBD stent (102 months) with stone-stent complex: A case report

Varsha Barai a,*, Jagdish Hedawoo b, Sanjay Changole b

a Postgraduate Student, Department of Surgery, Government Medical College, Nagpur, India
b Associate Professor, Department of Surgery, Government Medical College, Nagpur, India

A R T I C L E   I N F O

Article history:
Received 30 September 2016
Received in revised form
27 November 2016
Accepted 27 November 2016
Available online 7 December 2016

Keywords:
Choledocholithiasis
Forgotten stent
Stent-stone complex
Cholangitic abscess

A B S T R A C T

INTRODUCTION: Choledocholithiasis is presence of stone in Common bile duct (CBD) which can be treated by endoscopy or surgery [1]. Retained foreign bodies like stents forms a nidus for stone formation resulting in pain, fever, jaundice.

CASE PRESENTATION: 60 years female patient admitted in surgery ward with features of cholangitis with computed tomography showing cholangitic abscess with dilated common bile duct and sludge around stent in situ. Stone was found at proximal end of stent during surgery.

DISCUSSION: Stents may remain without complications or may migrate, and rarely form nidus for stone formation. If kept for long time they lead to bacterial proliferation, biofilm formation and precipitation of calcium bilirubinate presenting as fever, pain, jaundice. Stent-stone complex can be treated endoscopically and surgically [6,7]. As stent can cause stone formation, infection and other complications, timely removal of stent should advised.

CONCLUSION: Ill-effects of stent in-situ should be explained, record should be maintained [8] and patient should be advised regular follow up and stent removal after 6 weeks.

© 2016 The Authors. Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

1. Introduction

Choledocholithiasis is evident in approximately 10–15% patients with gallstones, more commonly secondary. However primary common bile duct (CBD) stones are more common in Asia. Choledocholithiasis can be treated by endoscopy or surgery [1]. Recent trend is to do ERCP primarily and stone extraction with or without CBD stenting. If not removed within time (4–6 weeks), Stent can act as a nidus for stone formation [2,3]. Here we discuss a case of Choledocholithiasis in a forgotten biliary stent (~8.5 years).

2. Case presentation

Our patient, a 60 years old female, presented with pain in abdomen since 8 days with nonbiliary vomiting and low grade fever. Past history was suggestive of obstructive jaundice in 2007. CT abdomen (2007) suggested benign stricture in lower CBD but no gallstones, brush cytology was negative for malignant cells. Patient underwent ERCP, sphincterotomy with CBD stenting on 2/8/2007. Patient was advised follow up for stent removal after one month. Patient did not go for stent removal as she had no complaints.

She remained asymptomatic for about 8.5 years. In Feb, 2016 (after 102 months), she presented with fever, abdominal pain and vomiting. On examination, patient was vitally stable with minimal tenderness in right hypochondrium. Blood profile was normal. Abdominal ultrasound revealed 8 mm calculus in gall bladder. Upper gastrointestinal endoscopy revealed grade 8 esophagitis with discoloured CBD stent in-situ. Endoscopic stent removal was unsuccessful. CECT abdomen (Fig. 2) suggested cholangitic abscesses in both lobes of liver along the biliary system with cholecystitis with 2 cm dilated CBD and hyperdense sludge around the stent. MRCP showed dilated intrahepatic biliary radicles with CBD stent in situ with sludge around with multiple cholangitic abscesses. Patient was planned for open cholecystectomy and CBD exploration. Though laparoscopy has advantages over open method [4], open surgery was chosen due to diagnostic dilemma (calculus with sludge around stent) and considering difficulty in dissection. On exploration, cholecystectomy was done. Gallbladder was oedematous and friable. CBD explored, stone was found at proximal end of CBD stent giving a lollipop like appearance to the stent-stone complex (Fig. 1). Stent –stone complex was removed along with sludge. CBD clearance was done and patency of distal end of duodenum confirmed by passing Bakes’ dilators. T-tube (14 Fr) kept and incision over CBD closed. Postoperative course was uneventful. T-tube cholangiogram was done on postoperative day 10 which showed contrast entering in duodenum. T-tube was removed on
day 10. Patient was followed up every month till now. Presently, patient has no complaints.

3. Discussion

CBD stones are of two types: primary (formed in CBD) and secondary stones (retained stones when found within 2 years of cholecystectomy). Primary stones are formed due to biliary stasis and infection [5]. The de novo radiolucent stones are formed around and above the stent in the proximal and distal part. The stones are usually more than 2–3 cm in diameter. The stent-stone complex more often takes the shape of the inside of the bile duct (often dumb-bell shape). Stent-stone complex can be formed because of infection, retained suture, surgical clips and secondary to traumatic strictures. Foreign bodies form a nidus for CBD stone formation [2]. Plastic stent blockage presents at a median patent interval of 62–165 days; these stents may be exchanged prophylactically at scheduled intervals or when stent dysfunction develop [6]. These plastic stents if kept for a prolonged period promote bacterial proliferation [7], biofilm formation [8] and release of bacterial beta-glucuronidase, which results in the precipitation of calcium bilirubinate. Calcium bilirubinate is then aggregated into stones by an anionic glycoprotein. CBD stones can present as pain, fever, jaundice. They can be removed endoscopically but if endoscopy fails, surgical intervention is required [9,10].

This is one of the cases in which CBD stent with stones remained asymptomatic for almost 8.5 years. Endoscopy is easy and safe method of CBD stone extraction with stenting and also for stent removal. In this case, after a period of 8.5 years, endoscopic stent removal was tried but failed and patient required surgery. Patient with CBD stent should be informed about ill-effects of stent in-situ and strictly advised to review for stent removal after 6 weeks.
4. Conclusion

Ill-effects of stent in-situ should be explained; record should be maintained [11] and advised regular follow up and stent removal after 6 weeks.

The case report is compliant with the SCARE Guidelines [12].

Conflicts of interest

The authors have no conflicts of interest to declare.

Funding

None.

Ethical approval

Ethical approval was not required and patient identifying knowledge was not presented in the report.

Consent

Written informed consent has been obtained.

Author contribution

Dr. Varsha Barai—Data collection, study concept, writing the paper.
Dr. J.B.Hedawoo—Data analysis, data interpretation.
Dr. S.Changole—Data analysis.

Guarantor

Dr. Varsha Barai.

References

[1] K.S. Yoo, G.A. Lehman, Endoscopic management of biliary ductal stones, Gastroenterol. Clin. North Am. 39 (2010) 209–227, viii.
[2] unlabelleda V.K. Bansal, M.C. Mishra, P. Bhowate, et al., Laparoscopic management of common bile duct stentolith, Trop. Gastroenterol. 30 (2009) 95–963.
unlabelledb A.M. Schuller, G.J. Reck, D.T. Lyon, Calculus formation around common bile duct stents: a complication of long-term biliary drainage. ([letter]), Gastrointest. Endosc. 37 (1991) 583–582.
[3] A.M. Schuller, G.J. Reck, D.T. Lyon, Calculus formation around common bile duct stents: a complication of long-term biliary drainage ([letter]), Gastrointest. Endosc. 37 (1991) 581–582.
[4] V.V. Grubnik, A.I. Tkachenko, V.V. Ilyashenko, et al., Surg. Endosc. 26 (2012) 2165, http://dx.doi.org/10.1007/s00464-012-2194-7.
[5] C.W. Ko, S.P. Lee, Epidemiology and natural history of common bile duct stones and prediction of disease56, Gastrointest. Endosc. 56 (Suppl. 6) (2002) S165–S169. Review. PubMed PMID: 12447261.
[6] A.C. Moss, E. Morris, P. MacMathuna, Palliative biliary stents for obstructing pancreatic carcinoma, Cochrane Database Syst. Rev. (1) (2006) CD004200, Review. Update in Cochrane Database Syst Rev. 2006; (2):CD004200. PubMed PMID: 16437477.
[7] J.W. Leung, J.Y. Sung, J.W. Costerton, Bacteriological and electron microscopy examination of brown pigment stones, J. Clin. Microbiol. 27 (1989), 915–215.
[8] A.G. Speer, P.B. Cotton, J. Rhode, A.M. Seddon, C.R. Neal, J.W. Holton, Biliary stent blockage with bacterial biofilm, Ann. Intern. Med. 108 (1988) 536–546.
[9] J.H. Siegel, R.P. Yatto, Biliary end prostheses for the management of retained common bile duct stones, Am. J. Gastroenterol. 79 (1984) 50–547.
[10] P.B. Cotton, Stents for stones: short-term good, long-term uncertain. ([editorial]), Gastrointest. Endosc. 42 (1995) 272–273.8.
[11] Mehmet Odasbasi, Cem Arslan, Sani Abubul, Haci Hasan Aboug, et al., Long-term effects of forgotten biliary stents: a case series and literature review, Int. J. Clin. Exp. Med. 7 (8) (2014) 2045–2052.
[12] R.A. Agha, A.J. Fowler, A. Saetta, I. Barai, S. Rajmohan, D.P. Orgil, for the SCARE Group, The SCARE statement: consensus-based surgical case report guidelines, Int. J. Surg. (2016) (article in press).