

“A CASE REPORT OF PRIMARY BILE DUCT STONES POST-CHOLECYSTECTOMY.”

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Abstract

Gallstone disease is extremely common in Western societies, with cholecystectomy being the standard treatment for patients with symptomatic gallstones. The incidence of common bile duct stones (CBD) with concomitant gallstones increases with age from 8 to 15% in patients younger than 60 years and up to 60% in the elderly. There are only a few reports of gallstones after cholecystectomy in the literature. Most of these reports describe the presence of stones in the gallbladder/cystic duct remnant or secondary to migration of the surgical clips. We report a single unique case of primary bile duct stones 7 years after open cholecystectomy.

Keywords

Primary Common Bile Duct Stones, Post Cholecystectomy, Magnetic Resonance Cholangiopancreatography (MRCP), Endoscopic Retrograde Cholangiopancreatography (ERCP), Case Report.

Introduction

Gallstone disease is extremely prevalent in western society with laparoscopic cholecystectomy (LC) being the standard treatment for patients with symptomatic gallstones. The prevalence of common bile duct (CBD) stones with concomitant gallstones increase with age from 8–15% in patients <60 years of age and up to 60% in the elderly [1]. For patients suspected of having CBD stones, endoscopic retrograde cholangiopancreatography (ERCP) plays an important role preoperatively. Most patients experience relief of symptoms after LC, but a small number experience post cholecystectomy syndrome, which presents as biliary colic [2]. Postcholecystectomy syndrome can be secondary to dysfunction of the sphincter of Oddi, traumatic stricture, retained CBD stones, or retained stones within a gallbladder remnant [2]. The condition is especially common within the first three years post-procedure. In the literature, there have been only a few case reports of post cholecystectomy bile duct stones occurring more than 10 years following surgery. Most of these reports describe the

presence of stones within the gallbladder/cystic duct remnant or secondary to migrating surgical clips [3, 4]. We report a single unique case of choledocholithiasis 7 years following open cholecystectomy.

Narrative

Patient Information - A 44-year-old lady presented to the Emergency Department with the chief complaints of pain in the right upper abdomen & yellowish discoloration of the sclera since seven days. The patient's past medical history included open cholecystectomy 7 years before the presentation. The patient started developing mild diffuse non-radiating upper abdominal pain & yellowish discoloration of the sclera that prompted her visit to the Emergency Department.

Clinical Findings - In the Emergency Department, the patient was conscious, oriented to time, place, and person. She had a temperature of 101.4°F, Pulse – 122 / min, Blood Pressure – 130 / 80 mmHg, and Icterus ++. On Per Abdominal Examination – The abdomen was non-distended, diffuse tenderness (non-radiating) was present in the Right Hypochondriac Region, the scar was healthy in the right subcostal region, and bowel sounds were present in all quadrants. Examination of the other systems was unremarkable.

Diagnostic Assessment – Laboratory Tests done are shown in **Table 1**. She had normocytic normochromic blood picture with leucocytosis with left shift. In addition, the patient was noted to have hyperbilirubinemia to 4.99 with elevated liver enzymes (ALT 270, AST 206, and ALP 96).

Therapeutic Intervention - An ultrasound of the Abdomen revealed the presence of 13.4 mm sized hyperechoic obstructive calculus in the CBD causing moderate dilatation of CBD measuring 14 mm & mild Intrahepatic Biliary Radical Dilatation.

The patient then underwent a Magnetic resonance cholangiopancreatography (MRCP) that was suggestive of Dilatation of intrahepatic biliary radicals in both right & left lobes. Right & left hepatic ducts are dilated 5 mm & 4 mm respectively. Common hepatic & bile ducts are dilated. The common Bile Duct at the porta is 10 mm. The common Bile Duct is dilated to its entire extent and shows a well-defined hypointense filling defect measuring approximately 6 x 5 x 8 mm (TR x AP x CC) in its pancreatic portion suggestive of calculus, of about 7 mm proximal to the ampulla.

The patient then underwent an Endoscopic retrograde cholangiopancreatography (ERCP) that confirmed the presence of stones within the bile duct (**Figure 1**). Common Bile Duct sphincterotomy with CBD clearance & stenting was done with a 10Fr 10cm DPT stent.

Follow-up & Outcomes - The patient tolerated the procedure well and was successfully treated with antibiotics, bilirubin decreased, and discharged home. The patient was asked to follow up with a gastroenterologist as an outpatient after 6 weeks for stent removal.

Patient Perspective - During the time she was hospitalized and after the treatment, the patient was delighted with the care she received and was optimistic about the outcome of her condition.

Informed consent - The patient was informed about the case report, why her case was peculiar, and the authors' interest in publishing her case. She willingly gave informed consent to allow the authors to use photos for this case report.

Patient's Consent - Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Discussion

Choledocholithiasis refers to the presence of bile duct stones. It is estimated that up to 15% of patients under 60 years of age have stones in the common bile duct, while this rate can be as high as 60% in the elderly [1]. Identified risk factors for complex gallstone disease are Asian ancestry, increasing age, and male sex [5, 6]. It is estimated that between 3.4 and 10% of patients have choledocholithiasis at the time of cholecystectomy [7, 8]. Delayed choledocholithiasis has been reported in patients with the most common cause being retention or reconstruction of stones in the gallbladder or residual cystic duct [3, 7].

Studies have shown that most patients (80%) with gallstones after cholecystectomy will develop within 3 years after surgery [8]. Later occurrence is thought to be secondary to migration of surgical clips, with cases reported up to twenty years after cholecystectomy. There are only a few reports identifying the disease at a later time interval [9]. Rarely are the stones judged as primary as in our case. Intrahepatic calculi can be primary or secondary. Primary intrahepatic lithiasis is less common in the United States and is usually the result of single or multiple dilations of the intrahepatic biliary tree leading to cholestasis. Secondary intrahepatic stones result from the migration of gallstones or gallstones or CBD stones in relation to previous surgery [10]. Other risk factors include prior sphincterotomy, which could allow debris to enter the CBD, leading to infection, nidus formation, and metabolic disorders. Saharia et al. described a cohort of 30 patients with primary biliary stones following cholecystectomy with a median of 12 years postoperatively until diagnosis. The most common symptom was acute cholangitis as in our patient [11].

Conclusion

We present a single, unique case of primary bile duct stone after cholecystectomy. This is one of the few cases in the literature to our knowledge. Given the latency of the presentation, it is important to have choledocholithiasis in mind even years after cholecystectomy.

Acknowledgment

The authors would like to thank Dr. D. Banerjee Professor & Head of Department of Medical Gastroenterology, Dr. D. Y. Patil Medical College, Hospital & Research Centre.

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Attatchments

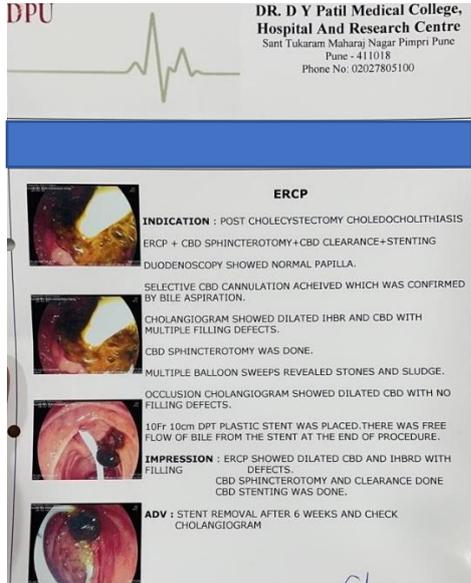


Figure 1 – Endoscopic Retrograde Cholangio – Pancreatography of patient.

PATIENT INFORMATION SHEET

Case Report Title - Primary Common Bile Duct Stones Post Cholecystectomy.

Institution: Department of General Surgery, Dr. D. Y. Patil Vidyapeeth University, Dr. D. Y. Patil Medical College, Hospital & Research Centre, Pune – 411018.

Name and signature of Participant: Anati Anati

Written informed consent is obtained from the participant. Data pertaining to socio-demographics, personal medical history, and lifestyle factors such as smoking, and alcohol will be collected by interview technique and documented in a predesigned data collection tool. The examination will be conducted according to a standardized protocol.

Name of investigator: Dr. (Col.) Sunil. Panchabhai & Dr. Bhavesh Mahajan.

Maintenance of confidentiality of records. The patient's name will not be used in any of the papers used for the study. Only the code number assigned will be used in this study. In any case, information related to the disease will be kept confidential and will not be disclosed without valid scientific or legal reasons which may be essential for the purpose of therapeutics or any other intervention without the patient's consent. Freedom of the individual to participate and to withdraw from the research at any time without penalty or loss of benefits to which the subject would be entitled otherwise: Taking part in the study is purely voluntary. The patient will have the right to continue medical care from the investigators and institute without penalty or loss of benefits which she would be entitled to otherwise, even if you choose to withdraw from the study. Costs and source of investigations, and drugs/ contrast media: The cost of investigations will be self-funded.

I hereby certify that the above contents have been explained to the patient in a language understood by her. I confirm that I have explained the purpose and nature of the study to the above patient and that I have answered all questions related to the study.

PARTICIPANT INFORMED CONSENT FORM (PICF)

Title: Primary Common Bile Duct Stones Post Cholecystectomy.

The contents of the information sheet that was provided have been read carefully by me & explained in detail to me, in a language that I comprehend, and I have fully understood the contents. I confirm that I have had the opportunity to ask questions. The nature and purpose of the study and its potential risks/benefits and expected duration of the study and other relevant details of the study have been explained to me in detail.

I understand that my participation is voluntary and that I am free to withdraw from the study at any time, without giving any reason, without my medical care or legal right being affected.

I understand that the information collected about me from my participation in this research and sections of any of my medical notes may be looked at by responsible individuals from Dr. D. Y. Patil Medical College, Hospital & Research Centre, Pimpri, Pune.

I give permission for these individuals to have access to my records. I also give my consent to publish my data for academic purposes provided my identity is kept confidential. I agree to take part in the above study.

Name of Participant: *Ananti Ananti*

Signature: *Ananti*

Place: Dr. D. Y. Patil Vidyapeeth University, Dr. D. Y. Patil Medical College, Hospital & Research Centre, Pune – 411018.

Table 1 – Results of Laboratory Tests Done.

Laboratory Tests	Result	Reference Range

Hemoglobin (g/dL)	13.1	12.3 – 15.3
Total Leucocyte Count (/uL)	13800	4000 - 10000
Platelet Count (/10⁶ uL)	234000	150000 - 400000
Absolute Neutrophil Count (/uL)	13248	2000 - 7000
Absolute Lymphocyte Count (/uL)	138	1000 – 3000
Serum Total Bilirubin (mg/dL)	4.99	0.10 – 1.20
Conjugated (Direct) Bilirubin (mg/dL)	3.74	Upto 0.3
Unconjugated (Indirect) Bilirubin (mg/dL)	1.25	0.1 - 1
AST (U/L)	206	8 – 43
ALT (U/L)	270	7 - 55
Alkaline Phosphatase (U/L)	96	35 - 102
Serum Amylase (U/L)	34	25 - 115
Serum Lipase (U/L)	54	73 - 393
Urea (mg/dL)	25	17 - 49
Creatinine (mg/dL)	0.81	0.6 – 1.2
HIV / HBSAG / HCV	Non - Reactive	Non - Reactive
Serum Sodium (mmol/L)	137	136 - 145
Serum Potassium (mmol/L)	4	3.5 – 5.1
Prothrombin Time (Seconds)	13.1	10.36 – 14.66
INR	1.05	0.85 – 1.15