

Migration of suture material into common bile duct leading to stone formation: A case report

N Sharma, A Gupta, R Maheshwari, R Gupta

Citation

N Sharma, A Gupta, R Maheshwari, R Gupta. *Migration of suture material into common bile duct leading to stone formation: A case report*. The Internet Journal of Surgery. 2008 Volume 19 Number 2.

Abstract

Recurrent common bile duct stones are a common problem. In spite of recommendations to use absorbable suture for ligating the bile duct end of the cystic duct, many surgeons continue to use nonabsorbable suture for this purpose. We report a patient who developed recurrent CBD stone due to the nonabsorbable thread acting as a nidus for stone formation. We reiterate that only absorbable suture should be used for ligating the bile duct end of the cystic duct during cholecystectomy.

INTRODUCTION

Common bile duct stones are rather common. It is estimated that the common bile duct is explored in 25% of the 500,000 cholecystectomies performed annually in the United States and that common duct stones are found in 12-15% of these patients₁. In addition, 3-5% of patients who have had exploration of common bile duct will subsequently be found to have retained or recurrent common bile duct stones₁.

Common bile duct stones can be classified as either primary or secondary. Secondary stones originate in the gall bladder and migrate into the common bile duct. They are the most common type encountered. Primary stones, forming de novo within the common duct, are less frequently encountered. It is generally agreed that stones found more than 2 years after cholecystectomy are primary common bile duct stones₂.

A variety of factors may contribute to the formation of primary common bile duct stones. In one study, 30% of recurrent stones in the common bile duct after cholecystectomy contained non-absorbable suture material in the centre of the stone, serving as nidus₃. We report a case of choledocholithiasis that developed 6 years after open cholecystectomy in which suture material served as a nidus for stone formation.

CASE REPORT

A 45-year-old female was referred to our institution in August 2008 from another hospital for evaluation of right upper quadrant pain, itching and recurrent fever. Earlier the patient had undergone an open cholecystectomy for chronic cholecystitis in August 2002.

Physical examination showed right upper quadrant tenderness. Laboratory examination revealed a total bilirubin of 1.5mg/dl (normal: 0.1-1.1mg/dl), and a direct bilirubin of 1.2mg/dl, a SGPT of 41U/L (normal: 0-40U/L), a SGOT of 71U/L (normal: 0-40U/L), and an ALP of 2095U/L (normal: 30-140U/L). Serum amylase and serum lipase were normal. USG revealed a dilated CBD with distal intraluminal obstruction. MRCP revealed an elongated structure in the distal half of the common bile duct measuring approximately 29 x 2mm in size and a dilated proximal common bile duct of 14mm. ERCP was not available at our institution and the patient refused to go to any other institution for ES. Common bile duct exploration was done which confirmed the presence of thread pieces forming the nidus of a stone in the distal common bile duct. The stone was soft and brown. After removal of the thread and associated stones, the patient's liver enzymes returned to normal, and she had an uneventful recovery.

DISCUSSION

Multiple cases of foreign body in the biliary tree have previously been reported₄. In the case described in this report, suture material migrated from the cystic duct stump and into the common bile duct, forming the nidus of a stone. The stone with suture material was removed after common bile duct exploration.

Cystic duct clip migration into the common bile duct has been reported after laparoscopic as well as open cholecystectomy₅. Table 1 summarizes the 17 reported cases of surgical clips or suture materials migrating into the

common bile duct. The time from surgery to presentation ranged from 5 months to 27 years. Ten cases occurred after an open cholecystectomy, six after laparoscopic cholecystectomy, one after conversion of laparoscopic to open cholecystectomy. All of the reported patients presented with recurrent abdominal pain, and in addition several patients presented with cholangitis and/or jaundice.

The use of absorbable suture has been recommended for closure of the cystic duct; an advice that is often ignored, sometimes causing late complications.

We would like to reinforce the advice of using absorbable suture alone for ligating the cystic duct.

Figure 1

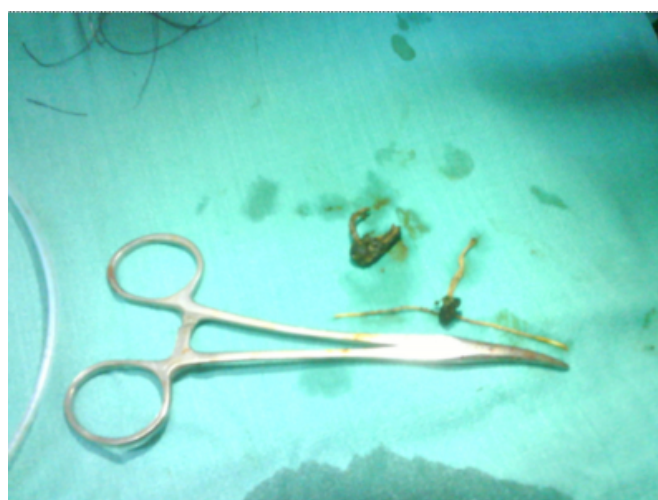
Table 1: Previous reports of recurrent CBD stones due to suture/clip

References	Age (yrs) /sex	Type of cholecystectomy	Time after cholecystectomy	Treatment
Walker ⁷	63/M	Open	2 yrs	Surgical
Margolis ⁸	72/M	Open	1 yr	Surgical
Davis ⁹	49/M	Open	3 yrs	Surgical
Martinez ¹⁰	86/F	Open	3 yrs	Endoscopic
	68/M	Laparoscopic converted to open	1 yr	Endoscopic
Lombardo ¹¹	72/M	Laparoscopic	2 yrs	Endoscopic
Raoul ⁶	34/F	Laparoscopic	10 months	Endoscopic
	65/F	Laparoscopic	6 months	Endoscopic
	1/F	Laparoscopic	5 months	Endoscopic
	47/F	Laparoscopic	8 months	Endoscopic
Wu ¹²	79/M	Open	4 yrs	Endoscopic
Ghazanfari ¹³	42/M	Open	4 yrs	Endoscopic
Janson ¹⁴	48/F	Open	10 yrs	Endoscopic
Brutvand ¹⁵	84/F	Open	3 yrs	Endoscopic
Fortun ¹⁶	72/F	Open	27 yrs	Endoscopic
Dell'Abate ¹⁷	67/F	Laparoscopic	1 yr	Endoscopic
Sharma (current report)	45/F	Open	6 yrs	Surgical

Figure 2

Picture 1: Removed CBD stone with the suture acting as

nidus for stone formation.



References

1. Tompkins RK, Doty JE. Modern management of biliary tract stone disease. *Adv Surg* 1987;20:279-302.
2. Bernhoft RA, Pellegrini CA, Motson RW, et al. Composition and morphologic and clinical features of common bile duct stones. *Am J Surg* 1984;148:77-85.
3. Wosiewicz U, Schenk J, Sabinski F, et al. Investigations on common bile duct stones. *Digestion* 1983;26:43-52.
4. Ban JL, Hirose FM, Benfield JR. Foreign bodies of the biliary tract. Report of two patients and review of literature. *Ann Surg* 1972;176:102-7.
5. Raoul JL, Bretagne JF, Siproudhis L, et al. Cystic duct clip migration into the common bile duct: A complication of laparoscopic cholecystectomy treated by endoscopic biliary sphincterotomy. *Gastrointest Endosc* 1992;38:608-13.

Author Information

Naveen Sharma, MS (Surgery)

Associate Professor, Department of Surgery, UFHT Medical College

Apurva Gupta, MS (Surgery)

Senior Resident, Department of Surgery, UFHT Medical College

Ritesh Maheshwari, MS (Surgery)

Senior Resident, Department of Surgery, UFHT Medical College

Rohitash Gupta, MBBS

Junior Resident, Department of Surgery, UFHT Medical College