

Necrotizing Soft Tissue Infection Caused by Spilled Gallstones

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Abstract

We report a case of a 57-year-old woman who presented with a necrotizing soft tissue infection of the right anterior abdominal wall, 1 year after open cholecystectomy for gallbladder perforation. Surgical exploration revealed pigmented gallstones along with pus in the abdominal wall and gallbladder fossa. Intraoperative spillage of gallstones is common during both open and laparoscopic cholecystectomy, but, in rare cases, can lead to serious complications including necrotizing infection of the abdominal wall.

Introduction

Cholecystectomy is the definitive treatment for gallstone disease. One major problem that can occur intraoperatively is the spillage of gallstones from the gall bladder.¹ Initially, spilled gallstones were considered to be harmless, but with time, several studies, case reports, and reviews have outlined the wide variety of complications.²

Case Report

A 57-year-old woman presented with fever and right upper abdominal pain for 10 days. She underwent open cholecystectomy for gallbladder perforation 1 year prior. She was febrile and tachycardic, and abdominal examination revealed a large 15 x 15-cm parietal wall swelling with bullae and necrotic skin in right hypochondrium and lower chest. Laboratory work-up revealed white blood cell count of 32,000/mm³. Abdominal contrast-enhanced computed tomography (CT) showed a 17 x 10-cm collection of in right anterolateral abdominal wall with mottled air foci and surrounding fat stranding. The collection was abutting the right lobe of liver with an 8 x 4-cm subcapsular collection (Figure 1).

A diagnosis of necrotizing soft tissue infection of right anterior abdominal wall with subcapsular liver abscess, likely due to a gossypiboma was made. Surgical debridement and probing of the abdominal cavity through a defect in the rectus sheath led to the gallbladder fossa, where multiple pigmented stones and pus were found. (Figure 1). Cultures grew *E. coli*, and intravenous piperacillin/tazobactam and clindamycin were started. The patient subsequently improved and the wound healed successfully by secondary intention.

Discussion

Intraoperative spillage of stone and bile is encountered during laparoscopic cholecystectomy with an incidence ranging from 3.8% to 30%.^{3,4} If spillage occurs during open cholecystectomy, they are easily removed by irrigating the abdominal cavity or by collecting with forceps, but these spilled stones can be displaced to any part of abdominal cavity and missed during removal. A dropped stone is typically walled by omentum and local fibrosis, rendering it harmless.⁵ However, 2.3% to 7% of spilled gallstones lead to abscess formation, cutaneous sinus, and fistulae.^{6,7} Risk factors for complications include acute cholecystitis, infected bile, spillage of pigmented

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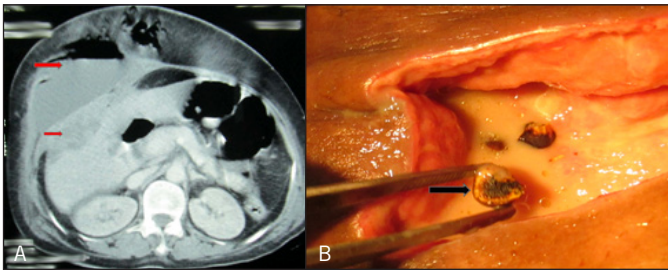


Figure 1. (A) Abdominal contrast-enhanced CT showing large pus cavity in right anterior abdominal wall with extensive surrounding fat stranding (large arrow) and a communicating subcapsular liver collection (small arrow). (B) Intraoperative photograph of debrided right anterolateral abdominal wall with pus cavity. Spilled pigmented gallstones retrieving from below the sheath from gallbladder fossa (arrow).

stones, multiple stones, and stone size of more than 1.5 cm.⁵ In a review of 127 cases of spilled gallstones requiring intervention, 44.1% presented with intraperitoneal abscess and 18.1% with abdominal wall abscess. The study also showed that around 20% of this population had thoracic abscess and retroperitoneal abscess.⁸ These complications usually occur in early postoperative period, though delayed presentations have been reported, usually in the elderly and immunocompromised patients.⁵

Our case is unique in regard to the timing and the extent of the soft tissue infection. To our knowledge, ours is one of few cases reporting delayed presentation of severe necrotizing soft tissue infection resulting from spilled stones, and only the second reporting necrotizing fasciitis.⁹ Patients should be informed postoperatively about the event of intraoperative stone spillage, possible long-term consequences, and active surveillance for complications.⁷

Disclosures

Author contributions: N. Pandit wrote the manuscript. H. Singh wrote and edited the manuscript, and is the article guarantor. H. Kumar collected the data. GR Verma approved the final manuscript and collected the data.

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