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Incarcerated Indirect Inguinal Hernia: A Complication of Spilled Gallstones

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ABSTRACT

Spillage of gallstones during laparoscopic cholecystectomy is not a rare event. We present a patient with spilled calculi causing an incarcerated hernia.

Key Words: Laparoscopic cholecystectomy, Spilled stones, Incarcerated hernia.

INTRODUCTION

Laparoscopic cholecystectomy has become the treatment of choice for patients with symptomatic cholelithiasis, since it first was performed in 1987 in France.[1] This trend has been accompanied by an increasing occurrence of unusual complications that require recognition and treatment. One of the most frequent complications is perforation of the gallbladder with leakage of bile or stones.[2] We report a case of spilled gallstones after laparoscopic cholecystectomy presenting as incarcerated indirect inguinal hernia.

CASE REPORT

A 56-year-old male presented in April 1997 with a one-month history of persistent painful swelling of the right groin that was reducible before, and reducible swelling of the left groin. There was no history of trauma, fever or gastrointestinal symptoms. Two months earlier, he had undergone laparoscopic cholecystectomy for chronic calcular cholecystitis. The procedure was unremarkable except for spillage of bile and a few gallstones into the peritoneum. Most of the stones were retrieved during surgery.

Examination revealed an afebrile patient with a tender, firm, nonreducible right inguinal hernia but a reducible left-sided hernia. Diagnosis was bilateral inguinal hernia with incarcerated right side. Laboratory investigations were normal with a white blood cell count (WBC) of 6.7. Exploration of the right side revealed gallstones at the fundus of the sac attached to the inner wall, with an inflammatory reaction around it, rendering the hernia irreducible **(Figure 1)**. The gallstones were removed, and bilateral herniotomies and Gore-Tex Mycromesh repair were performed. The patient had an uneventful recovery.

Pathologic evaluation revealed 3 0.6-cm green calculi similar to the calculi recovered at the previous cholecystectomy. The hernia sac from the right side was composed of fibroadipose tissue with a hyperplastic serosal lining and subserosal inflamed granulation tissue consistent with an incarcerated hernia **(Figure 2)**. The hernia

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sac from the left side showed only mesothelial hyperplasia.

DISCUSSION

Laparoscopic cholecystectomy complications include those of laparoscopy as well as those of cholecystectomy.[3] The incidence of spillage of bile and gallstones during laparoscopic cholecystectomy varies from 1% to 20% at different major centers,[4] and is more common than during open cholecystectomy.[5] During laparoscopic cholecystectomy, the gallbladder may be torn by the penetrating bites of the grasping instrument or sheared by to-and-fro traction on the gallbladder wall as it is moved to enhance exposure. The gallbladder may be inadvertently entered during its dissection from the liver bed. Finally, stone spillage may occur during the forced delivery of a freed tense gallbladder through the small port, as in our case. Shocket reported that in at least 15% of completed laparoscopic cholecystectomies, stones are left behind.[5] Almost all prove clinically innocuous.[5] Trends have changed, and many authors would agree that retrieval of all stones is the optimal management after spillage during laparoscopic cholecystectomy.[6,7] Indeed, some have considered that loss of stones is an indication for conversion to open cholecystectomy, since retained stones may cause infection.[8-11]

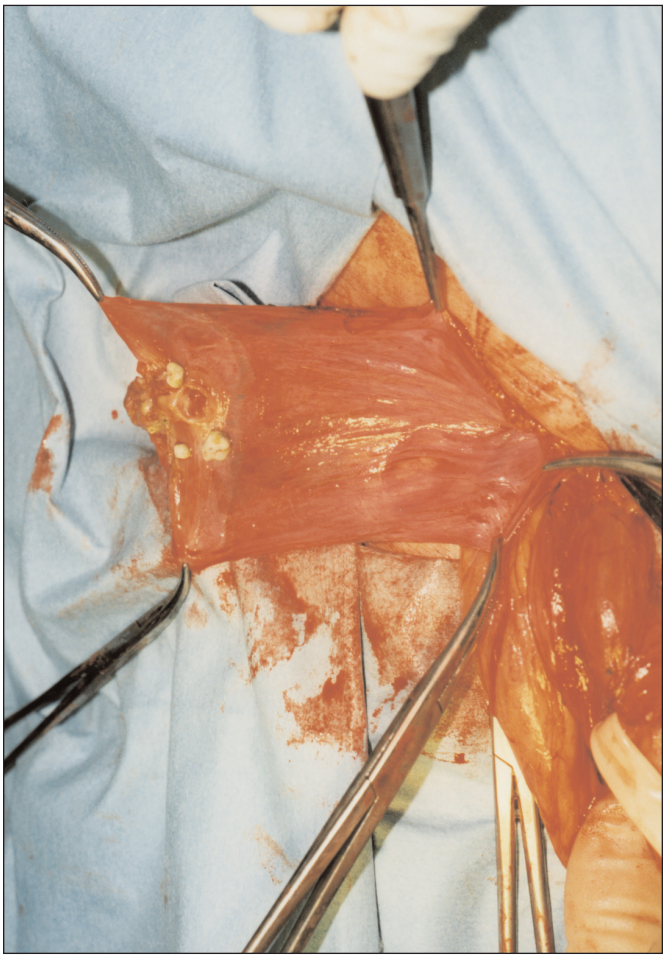

Figure 1. Exposed inside of the hernia sac showing constriction in inflamed hernia fundus and gallstones.

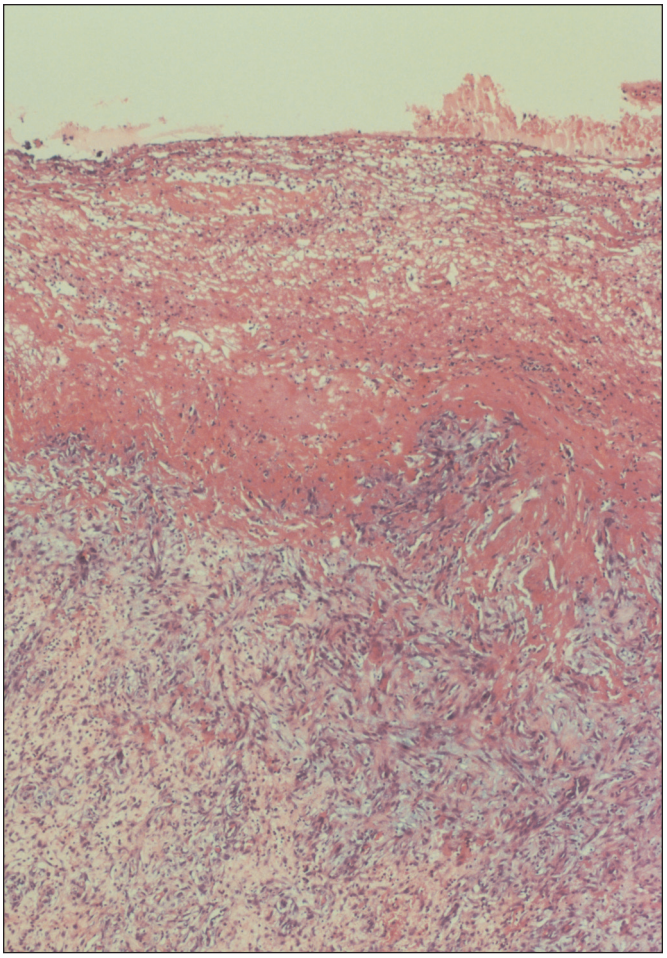

Figure 2. Photomicrograph right hernia sac (H and E stain, x50).

Stones that fall out during gallbladder extraction usually lie free in the peritoneal cavity or in the preperitoneal tissue just deep to the site of stone extraction.[12] In most cases of chronic calcular cholecystitis, cultures taken of gallbladder bile are sterile. Therefore, even major stone spillage, which occurs in about 1% of cases, is considered inconsequential, but an attempt should be made to retrieve stones through the laparoscopic route.[12] Metscher reported that pigment calculi may lead to severe local inflammation in rats.[13]

The patient described had stones left intraperitoneally during gallbladder extraction from the abdomen. The stones then migrated transcoelomically downward to settle in a right inguinal hernia sac. Later, the stones induced a severe inflammatory response resulting in constricting fibrous tissue at the hernial fundus, causing irreducibility and presenting as an incarcerated hernia. **(Figure 1)**. This case presents a new complication resulting from leaving spilled gallstones behind. We recommend that every effort should be made to retrieve these stones in order to avoid complications.

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