

Case Report

Gallstone ileus one quarter of a century post cholecystectomy

Mahmud Saedon;¹ Stavros Gourgiotis;² Nikolaos S. Salemis;² Ali W. Majeed;¹ Apostolos Zavos²

Abstract

Gallstone ileus is a rare but potentially serious complication of cholelithiasis. It is usually preceded by history of biliary symptoms. It usually occurs as a result of a large gallstone creating and passing through a cholecysto-enteric fistula. Most of the time, the stone will pass the GI tract without any problems, but large enough stones can cause obstruction. The two most common locations of impaction are the terminal ileum and the ileocaecal valve because of the anatomical small diameter and less active peristalsis. We present an unusual case of small bowel obstruction secondary to gallstone ileus 24 years after an open cholecystectomy.

Key words: Gallstone, ileus, cholecystectomy.

Introduction

Gallstone ileus is a rare condition and accounts for only 1-4% of all mechanical intestinal obstruction, but it is becoming more common as a result of increase the aging population.¹ It usually occurs in elderly females and is associated with a high mortality of 7.5%-15%,^{1,2} largely due to delayed diagnosis and concomitant conditions such as cardiorespiratory diseases, obesity and diabetes mellitus.

We report an unusual case of small bowel obstruction secondary to gallstone ileus 24 years after an open cholecystectomy. We hypothesize that a jejunal diverticulum found during laparotomy was harbouring the gallstone and then released it after this length of time causing gallstone ileus.

¹ Upper GI Department, Royal Hallamshire Hospital, Glossop Road, Sheffield, UK.

² Second Surgical Department, 401 General Army Hospital of Athens, Greece.

Address for correspondence:
Stavros Gourgiotis MD PhD
41 Zakinthinou Street, 15669, Papagou, Athens, Greece
Telephone & Fax number: +30 2106525802
E-mail: drsgourgiotis@tiscali.co.uk

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Case report

A 72-year-old gentleman was admitted with 4-day history of severe, constant, central abdominal pain associated with recurrent episodes of vomiting. No other gastrointestinal symptoms were noted. His past medical history included hypertension, myocardial infarction, Type II diabetes mellitus, appendectomy, acute pancreatitis secondary to gallstones and open cholecystectomy in 1983.

On initial examination, he was afebrile and haemodynamically stable. Abdominal examination revealed tenderness and guarding in the central area, with no abdominal distension. His white cell count and amylase were normal and CRP was 29.6. A plain abdominal film showed some distended small bowel loops in the left upper quadrant. However, the overall appearance was non-specific. Initial CT scan showed focal fluid-filled small bowel loops in the left iliac fossa with wall thickening. No pneumoperitoneum or mechanical obstruction was noted.

The patient was treated conservatively as a possible partial obstruction secondary to adhesions. However, he continued to vomit and developed a high temperature and abdominal distension. Repeat CT scan demonstrated a 3 cm, mixed attenuation intra-luminal lesion within the distal small bowel suggestive of a gallstone (*Figure 1*).

The patient underwent laparotomy, which revealed a large 'gallstone' (33 × 30 × 20 mm) causing small bowel obstruction (*Figure 2*). There were also large mesenteric diverticulae in jejunum and upper ileum. Enterolithotomy was performed on the anti mesenteric of the small bowel and the stone was extracted. Chemical analysis confirmed that it was a gallstone. The patient recovered well post-operatively and discharged home.

Discussion

Gallstone ileus is a rare but potentially serious complication of cholelithiasis. It is usually preceded by history of biliary symptoms. It usually occurs as a result of a large gallstone creating and passing through a cholecysto-enteric fistula. Most of the time, the stone will pass the GI tract without any problems, but large enough stones can cause obstruction. Some authors suggest that stone



Figure 1. CT image showing ectopic gallstone in the small bowel.

size should be at least 2 cm to 2.5 cm in diameter to cause obstruction.² The two most common locations of impaction are the terminal ileum and the ileocaecal valve because of the anatomical small diameter and less active peristalsis.

The diagnosis of gallstone ileus is difficult and in 50% of cases the diagnosis is often only made at laparoscopy.¹ Early diagnosis improves outcome.

The clinical manifestation of gallstone ileus is non-specific. They present with abdominal pain, vomiting, nausea and worsening general state. Plain abdominal film is usually unhelpful in diagnosing the condition because only 10% of gallstones are sufficiently calcified to be visualized radio-graphically. The classic presentation is Rigler's triad of small bowel obstruction, pneumobilia and atypical mineral shadow on plain radiograph. Abdominal ultrasound is useful to confirm cholelithiasis and identify fistulae. As demonstrated in this case, abdominal CT is preferable in identifying gallstones because of its better resolution. It offers prompt and rapid diagnosis of gallstone ileus before operation and capability of estimating the site and size of the ectopic gallstone is increased.³

Surgery remains the mainstay of treatment. Enterolithotomy can be performed through laparotomy or laparoscopic assisted.^{1,4} In patients with substantial co-morbidities, conservative approaches such as endoscopy⁵ and lithotripsy can be an option.

In our case, we speculate that the presence of large jejunal diverticulae suggests the possibility of the gallstone having been lodged in a diverticulum and then



Figure 2. The gallstone.

moved out to cause obstruction. Another possibility is primary common bile duct stone but the diameter of the bile duct much smaller than the stone as seen in the CT scan and intra-operatively. Faecolith, enterolith and foreign bodies are other differentials but chemical analysis confirmed bile pigments to be the composition of the stone. It is possible that bile pigments may have deposited on the enterolith but the stone composition shows that it is indeed made entirely from bile pigments.

In conclusion, gallstone ileus after so long period of time following cholecystectomy is very unusual. High index of suspicion is crucial in making the correct diagnosis and avoiding delay in treatment.

References

1. Reisner RM, Cohen JR. Gallstone ileus: a review of 1,001 reported cases. *Am Surg* 1994; 60: 441-6.
2. Rodriguez HJI, Codina CA, Girones VJ, Roig GJ, Figa FM, Acero FD. Gallstone Ileus: results of analysis of series of 40 patients. *Gastroenterol Hepatol* 2001; 24: 489-94.
3. Yu CY, Lin CC, Shyu RY, Hsieh CB, Wu HS, Tyan YS, Hwang JI, et al. Value of CT in the diagnosis and management of gallstone ileus. *World J Gastroenterol* 2005; 11: 2142-7.
4. Lichten JB, Tehrani K, Sekons D. Laparoscopic assisted enterolithotomy for gallstone ileus in an atypical location. *Surg Endosc* 2003; 17: 1496-7.
5. Clavien PA, Richon J, Burgan S, Rohner A. Gallstone ileus. *Br J Surg* 1990; 77: 737-42.