

Gallstone ileus: Report of a case successfully treated by a laparoscopically-assisted enterolithotomy



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Gallstone ileus: Report of a case successfully treated by laparoscopically-assisted enterolithotomy

Gallstone ileus is an unusual cause of small bowel obstruction that occurs more frequently in elderly patients. The diagnosis is always very challenging and in most of cases this rare complication is misdiagnosed before surgery. The Authors report on a 81-year-old woman with small bowel obstruction who was laparoscopically diagnosed with gallstone ileus and successfully treated by a laparoscopically-assisted enterolithotomy.

KEY WORDS: Cholecystoenteric fistula, Gallstone ileus, Laparoscopically-assisted enterolithotomy.

Introduction

Gallstone ileus is an unusual cause of small bowel obstruction that occurs more frequently in elderly patients. The majority of patients are women with a past history of gallstones and cholecystitis. Although some Authors report brilliant results using abdominal CT, the diagnosis is always very challenging and in most of cases this rare complication is misdiagnosed before surgery ¹. Laparoscopic approach in case of small bowel obstruction has been reported in several cases ². Laparoscopic enterolithotomy for gallstone ileus has been described and carried out by a classic three/four port technique or by a video-assisted technique ³⁻⁵. The current case is a 81-year-old woman with a small bowel obstruction without any radiological evidence of the cause who were diagnosed with gallstone ileus by diagnostic laparoscopy and underwent successfully laparoscopically-assisted enterolithotomy.

Case report

A 81-year-old woman was admitted to our hospital with a 2 days history of intermittent abdominal pain and

emesis. There was no history of abdominal surgery. Her abdomen was soft, nontender and mildly distended. No masses were palpable and no evidence of hernia was found on physical examination. Bowel sounds were present and increased. Rectal and pelvic examination were unremarkable. The patient was afebrile and white blood cell count was 10500/mm³. Liver and pancreas function tests were within normal limits. Plain abdominal X ray revealed dilated loops of small bowel with fluid levels in the erect posture. Ultrasonography of the liver showed only a contracted gallbladder. CT scan of the abdomen was completely negative except for small bowel distension. After 12 hours of observation and conservative treatment without any improvement and "without any idea" about the cause of the obstruction we decide to proceed with a diagnostic laparoscopy. Through a 1 cm umbilical incision a 10 mm trocar was placed and peritoneum was insufflated. Using a 10 mm laparoscope we visually inspected the cavity and explored carefully all intestine. All findings were negative till we checked the distal jejunum where we observed a hard mass >3 cm large dilatating the intestinal wall without any possibility of spontaneous evacuation. Extending 2 cm more the incision and, using two small retractors placed in the port-site and a grasper, we brought out extracorporeally the intestine. We performed an enterotomy and, using a ring forceps, we extracted a gallstone 3.6 x 3.4 cm large. The intestine was placed again in abdomen and, considering this unexpected finding, we looked for a cholecystoenteric fistula. We observed adhesions between gallbladder and duodenum, predictive sign of

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the presence of a cholecystoduodenal fistula. Considering the general conditions and the age of our patient, we decided not to undertake any further treatment. Finally the skin wound was closed. The patient recovered well and was discharged after 2 days without any post-operative complication. At one year follow up no complications are reported and the patient is in good health.

Discussion

Gallstone ileus is a rare complication of cholelithiasis usually caused by the migration of a large gallstone from the gallbladder into the duodenum (80% of cases) or into the small bowel via a cholecystenteric fistula. Usually the gallstone obstructs completely the lumen when his size is more than 2.5 cm and impacts in the narrow ileum or in the ileocaecal valve. The classic radiographic triad of small bowel obstruction, pneumobilia and ectopic gallstone is pathognomonic but occurs only in 40-50% of cases in different series⁶. The use of CT imaging for intestinal obstruction increased in these last years and some Authors report brilliant results in gallstone ileus diagnosis using abdominal CT⁷⁻⁹. We performed also an abdominal CT but it was useless. No pneumobilia neither any cholecystenteric fistula was shown. All radiological findings defined like diagnostic for gallstone ileus (Rigler's triad) were negative except small bowel distension and fluid levels: no air in gallbladder/biliary tree on CT scan, no ectopic stone visible in plain films radiographs or CT scan, no presence of fistula neither air in the biliary tract on ultrasonography. The terminal ileum and the ileocaecal valve were free from any evidence of obstruction on CT and ultrasound scan. Finally after 12 hours of observation and conservative treatment we decided to perform laparoscopically an abdominal exploration discovering an impacted gallstone at the distal jejunum. We believe that CT scan could be useful in diagnosis of gallstone ileus but only in few and casual cases. Early diagnosis is always very difficult and challenging. The use of laparoscopic approach is safe and useful to recognize etiology in case of bowel obstruction avoiding unnecessary laparotomies for common cause of obstruction like adhesions or as well as in our case for gallstone ileus. All these kind of situations are easily treatable by laparoscopy and the advantages for the patient are several (low morbidity, less post-operative stay, quicker recovery). The surgical management of gallstone ileus could be totally by a three/four ports laparoscopic approach as described in literature by some Authors. We believe that in our case the use of a one-port technique has been very advantageous. In fact, performing this minimally invasive procedure, we avoided an unnecessary laparotomy and the useless placement of other trocars (one 10 mm and two 5 mm trocars more, by the standard procedure). In this way, the operating time has been very short (30 min), null the morbidity and very quick the recovery (only 2 day of post-operative stay). Moreover,

this fast and easy technique for laparoscopically-assisted enterolithotomy described here required a limited number of instruments and maneuvers because of the extracorporeal extraction of the impacted gallstone.

A further question is whether biliary-enteric fistula should be treated at the time of enterotomy (one-stage surgery) or performed later (two-stage surgery) or not carried out at all. Some Authors suggest to perform cholecystectomy and repair of fistula in combination with the enterotomy and calculus extraction in order to prevent complications like the recurrence of gallstone ileus, cholangitis and gallbladder cancer¹⁰. In our case we decide not to perform cholecystectomy and not to treat the biliary enteric fistula because of the age and general conditions of the patient. Our patient is well after 1 year follow up and no complications occurred. In our opinion the main goal in gallstone ileus and in so elderly patients is the relief of the intestinal obstruction. The repair of fistula and colecystectomy should be reserved for patients with residual stones in gallbladder or in common bile duct and performed later (two-stage surgery). Our case was very challenging because we discovered to be in front of a gallstone ileus only intra-operatively. No radiological signs were predictive and small bowel obstruction was the only pre-operative finding.

We propose this case report for the rarity of gallstone ileus and in order to keep high the attention on this unusual cholelithiasis complication whenever we are in front of a patient of whatever age with intestinal obstruction. Furthermore, we believe that laparoscopic approach should be, at the beginning, the gold standard in case of small bowel obstruction in order to avoid unnecessary laparotomies and to reduce the morbidity associated and the hospital stay, especially in elderly patients. Our experience suggests that laparoscopically-assisted enterolithotomy for gallstone ileus using one port is safe, feasible, with minimal skin incisions and fast recovery.

Riassunto

L'ileo biliare è una rara causa di ostruzione del piccolo intestino che colpisce più frequentemente gli anziani. La diagnosi è sempre molto insidiosa e, nella maggior parte dei casi, questa rara complicanza viene riscontrata al tavolo operatorio.

Gli AA. presentano il caso di una donna di 81 anni con ostruzione del piccolo intestino alla quale è stato diagnosticato un ileo biliare tramite una laparoscopia diagnostica e che è stata trattata con successo con una enterolitomia assistita da laparoscopia.

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Commento

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L'ileo biliare rappresenta una causa rara di ostruzione del piccolo intestino dovuta alla migrazione di un grosso calcolo dalla colecisti o dal coledoco nell'ileo distale. La diagnosi è sempre molto insidiosa e nella maggior parte dei casi vien fatta soltanto intra-operatoriamente. Solo nel 40-50% dei pazienti è possibile far diagnosi riscontrando la classica triade radiologica di ostruzione intestinale, pneumobilia o presenza di un calcolo ectopico. L'accesso laparoscopico è stato ampiamente utilizzato sia come momento diagnostico che terapeutico in presenza di ostruzione intestinale e diversi casi sono descritti in letteratura circa il trattamento laparoscopico dell'ileo biliare. Gli Autori descrivono un caso di ileo biliare presentatosi senza alcun segno radiologico di aria nelle vie biliari, di calcolo ectopico o di fistola diagnosticato tramite laparoscopia diagnostica e trattato con successo con una enterolitotomia assistita da laparoscopia. Il caso clinico presentato è interessante, ben scritto ed evidenzia il ruolo della laparoscopia nella gestione di questa rara complicanza. L'accesso laparoscopico, in caso di ostruzione intestinale, così come sottolineato dagli Autori, offre diversi vantaggi (procedura miniinvasiva, degenza ospedaliera più breve, rapida guarigione, risparmio di laparotomie non necessarie) ed è, quindi, procedura raccomandabile ogniqualvolta sia realizzabile e sicuro.

Gallstone ileus is an unusual cause of small bowel obstruction due to the migration of a large gallstone from the gallbladder or common bile duct to the terminal ileum. The diagnosis is always very challenging and in most of cases made only intraoperatively. Only 40-50% of patients are diagnosed by the classic radiographic triad of small bowel obstruction, pneumobilia and ectopic gallstone. Laparoscopic approach has been widely used both as diagnostic and therapeutic tool in case of intestinal obstruction and some reports are available in literature about laparoscopic management of gallstone ileus. The Authors describe a case of gallstone ileus without radiological findings of air in the biliary tree, ectopic stone or fistula diagnosed laparoscopically and successfully treated by a laparoscopically-assisted enterolithotomy. The case report is interesting, well written and highlights the role of laparoscopy in the management of this rare complication. Laparoscopic approach in case of small bowel obstruction, as reported by the Authors, offers several advantages (minimally invasive procedure, shorter hospital stay, quicker recovery, no unnecessary laparotomy) and it is, therefore, recommended to use this approach whenever it is possible and safe.

