Case Report

An unforgettable concurrence: Successfully managed gallstone ileus accompanied by diabetic nephropathy

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Background: Gallstone ileus is an uncommon complication of gall stones associated with potentially serious morbidity and mortality. **Case Report:** We reported a 60-year-old male case who presented with renal failure and pain in right hypochondriac region. He also had a history of brain infarcts along with diabetes which is an additional factor for mortality. On Computed Tomography of the abdomen, he was diagnosed to have cholecystocholedochal fistula including air in the gall bladder and obstruction in the distal part of the ileum. Computed tomography plays an important role to make the proper diagnosis and in treatment. **Conclusion**s: As in our case, diagnosis was challengeable because of renal failure,diabetes, septicaemia and intestinal obstruction (peritonitis). We did surgery on the basis of peritonitis which remains the only choice in such cases. . In follow- up of 1 month patient was doing well and asymptomatic.

Key words: Obstruction, Stone, Pneumobilia, Renal Failure, Surgery.

INTRODUCTION

In 1654, Bartolin coined the term "gallstone ileus" to refer to mechanical intestinal obstruction due to impaction of gallstones within the intestine. It was an uncommon surgical emergency exclusively in the seventh and eighth decades.[1,2] Gallstone ileus is a rare complication of gallstones that occurs in 1-4% of all cases of bowel obstruction and in up to 25% of cases of non-strangulated small-bowel obstruction in patients over 65 years of age.[2,3] The condition should be suspected in all patients presenting with features of small-bowel obstruction in absence of a surgical scar and external hernia, especially in elderly females. The diagnosis can always be confirmed by plain X-ray, ultrasound and computed tomography (CT) scan. Misdiagnosis however, is common.

CASE REPORT

A 60-year-old male presented with vomiting and abdominal pain, which had lasted for two days, in Maharishi Markandeshwer Institute of Medical Sciences and Research, Mullana, Distt-Ambala, India in March, 2011. Patient had been previously treated in a private hospital for intestinal obstruction using Ryle's tube aspiration, intravenous fluids, and antibiotics. He had also been kept orally nil for about 1 week, but there was no relief. There was also a history of old brain infarcts and he was a known diabetic on regular treatment. Abdominal examination revealed only tenderness on the right side while the rest of the abdomen was soft and bowel sounds were present. On blood tests, elevated total leukocyte counts (15,500 /cu mm), blood urea (96 mg/dl), and creatinine (2.6 mg/dl) were observed. Erect skiagram and ultrasound showed dilated loops of the small bowel. On contrast enhanced computed tomography (CECT), there was a stone/stricture/obstruction in distal part of the ileum along with air in the gallbladder. Diagnosis was made as intestinal obstruction with septicemia on basis of clinical and radiological correlations.

In view of acute intestinal obstruction, laparotomy was performed and findings revealed proximal

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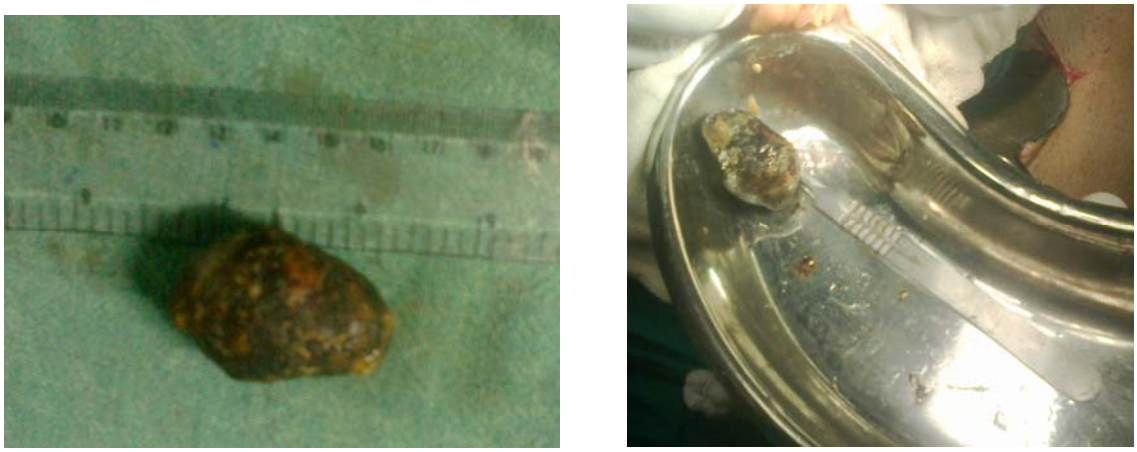
dilated loops without any collection in the peritoneum. A large stone of 4 cm in size was present one foot proximal to ileocaecal junction and was causing obstruction (Figure 1). The gallstone was removed through the perforation site after milking and strictureplasty were conducted (Figure 2A and 2B). On gross examination, the stone was oval in shape, hard in nature, brownish in color, and 5 cm in size (Figure 3A and 3B). The patient is recouping well post-operatively.

Figure 1. Operative picture showing impacted stone and proximal dilated loops of the jejunum

A B

Figure 2. A and B. Impacted stone removed from the intestine



A B

Figure 3. A and B. Gross specimen of the stone

DISCUSION

Gallstone ileus is an uncommon complication of gallstones along with Mirizzi syndrome and cholecystocholedochal fistula. It accounts only for 1-4% of all causes of intestinal obstruction and up to 25% of cases of non-strangulated small-bowel obstruction in patients over 65 years of age.[2] The gallstone may enter the intestine through a fistulous communication between the common bile duct and the gastrointestinal tract. However, the gallstone can impact anywhere in the gastrointestinal tract and it should be at least 2-2.5 cm in diameter to cause obstruction.[2,4] As shown by Reisner and Cohen, impaction of the stone can occur at any part of the bowel including ileum (60.5%), jejunum (16.1%), stomach (14.2%), colon (4.1%), and duodenum (3.5%). It can also be passed spontaneously (1.3%).[5] It most frequently occurs in the terminal ileum and the ileocecal valve because of their narrow lumen and potentially less active peristalsis.

The most common complications of gallstone disease are acute cholecystitis, acute pancreatitis, choledocholithiasis with or without cholangitis, and a gangrenous gallbladder. Its mortality rate could be reduced with early diagnosis and prompt treatment (Table 1).[5]

Table 1. Morbidity from gallstone ileus [5]

Morbidity of gallstones	
Wound infection	32
Biliary symptoms	15
Recurrence	4.7
Operation	10

In the past, it was difficult to clinch the diagnosis, but the advent of CT and MRI has made it easier to diagnose gallstone ileus.[6] In 50% of cases, the diagnosis is often only made at laparotomy.[5] The classic Rigler's triad of radiography includes mechanical bowel obstruction, pneumobilia, and an ectopic gallstone within bowel lumen. However, air in the gallbladder, small bowel obstruction, and gallstone ileus imply the presence of biliary enteric fistula.[3,7]

Management of gallstone ileus is controversial. The choice is between performing simple enterolithotomy with longitudinal incision on the antimesenteric border proximal to the site of obstruction, or a single-stage procedure involving enterolithotomy, cholecystectomy, and closure of the fistula. The choice of the surgical procedure is largely determined by the clinical condition of the patient. If the patient is hemodynamically stable, then single-stage procedure can be performed. However, in unstable patients with renal failure, enterolithotomy alone is considered sufficient (Table 2).[5,7,8] We thus performed enterolithotomy since our patient suffered from renal failure, diabetics, and brain infarcts. The patient remained stable in the postoperative period.

Table 2. Mortality from gallstone ileus based on surgical procedure .[5]

Procedure	Mortality
One stage	19/113(16.9)
Enterolithotomy alone	94/801(11.7)
Non-operative	13/49(26.5)

The laparoscopy-assisted techniques have been reported by Sarli et al. who successfully treated three women with gallstone ileus. Their patients made uneventful recovery.[9] However, one should remember that laparoscopy is somehow more challenging in cases of dilated and edematous bowel and may require gentle mobilization of the bowel to prevent perforation. The final technical issues to remember are milking the stone and taking the enterotomies away from the site of impaction because it is often edematous. We also followed the same procedure in our case. In addition, resection of a segment of the bowel might be necessary if the stone is firmly fixed in an edematous and inflamed segment of bowel.

CONCLUSION

This entity should be kept in the back of mind as differential diagnosis of intestinal obstruction in patients with sonographic findings of inflammatory changes of gallbladder, especially elderly women. Abdominal CT is usually the preferred diagnostic modality because of its high resolution. The goal of treatment in gallstone ileus is early relief of intestinal obstruction and minimization of morbidity and mortality

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