

RECURRENT GALL-STONE ILEUS: A CASE REPORT

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SUMMARY

Gall stone is responsible for about 1% of total small bowel obstruction,^{1,2} and recurrent gall stone ileus is even more unusual.³ Gall stone ileus is caused by the impaction of the stone in bowel lumen. It was first described in a patient examined at autopsy by Bartholin in 1654. This paper based on unusual recurrent intestinal obstructions by a gall stone. The patient presented with large bowel obstruction and it was due to a large gall stone impacted in the pelvic colon. Four months later the same patient presented with small bowel obstruction due to large gall stone impacted in the terminal part of the ileum at 61 cms from the ileo-caecal valve. Gall stone obstruction of the colon is one of the rare complications. This rare complication usually occurs in elderly females⁴ in whom there is frequently an underlying pathological condition at the site of obstruction in the colon. The calculus usually migrates through a cholecysto-colonic fistula in case of large bowel obstruction. In case of a small bowel obstruction the calculus usually migrates through a cholecysto-duodenal fistula. Diagnosis can be established by plain X-rays of the abdomen where there is gas shadow in the biliary system, sometimes the gall stone can be seen if it is radio opaque (10-16% gall stone is radio opaque) at the site of obstruction. Otherwise diagnosis is always made at laparotomy.

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CASE REPORT

87-year-old, obese female was admitted to Belford Hospital, Fort William, on 6th July 1974, with ten days history of lower abdominal pain, intermittent vomiting and absolute constipation. In the past she was quite well with no history of acute cholecystitis or any gastro-intestinal disorder.

Physical examination revealed she was quite obese, no jaundice, mild dehydration, abdominal distention, left-sided abdominal tenderness, and no masses felt per abdomen. On rectal examination, a hard mass was felt in the pelvis. Sigmoidoscopic examination was not performed.

Erect and supine abdominal X-rays were taken which showed gas in the biliary tree and calcified round mass in the pelvis, obstructing the pelvic colon. Proximal to the obstruction, the descending colon, transverse colon and the ascending colon were all distended. Provisional diagnosis was made as gall-stone ileus.

After correcting fluid and electrolytes laparotomy was carried out through right lower paramedian incision. There were distended descending, transverse and ascending colons. A hard mass was felt just above the pelvirectal junction. A attempt was made to push the mass down to the rectum without success. The stone was delivered through a colotomy wound made at the site of the obstruction. The fistula between the transverse colon and the gall bladder was identified and surgically not disturbed. Remaining intestine was explored but failed to find any more stones. The patient made a complete recovery and was discharged home two weeks after the operation. She remained asymptomatic since. There was no clinical evidence of

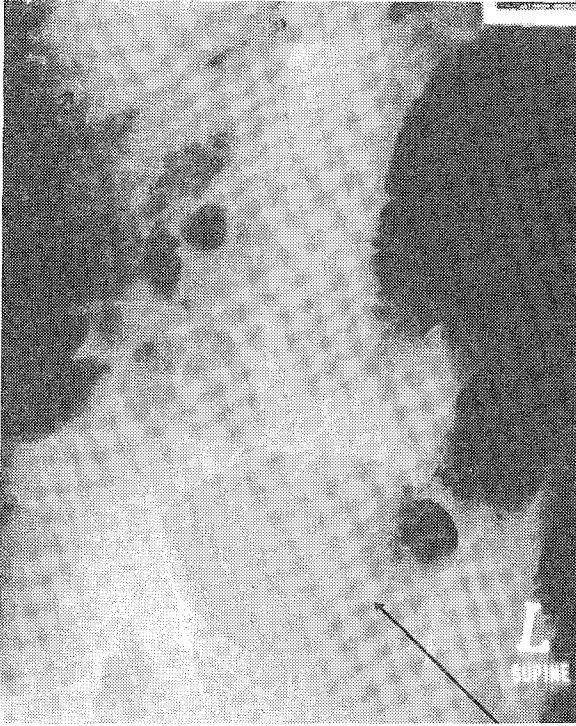


Fig. 1 Shows dilated loops of the large bowel with large round faintly opacified mass in the pelvis (black arrow), and gas in the biliary tree (black arrow in the right hypochondrium). Film is slightly rotated to the left.

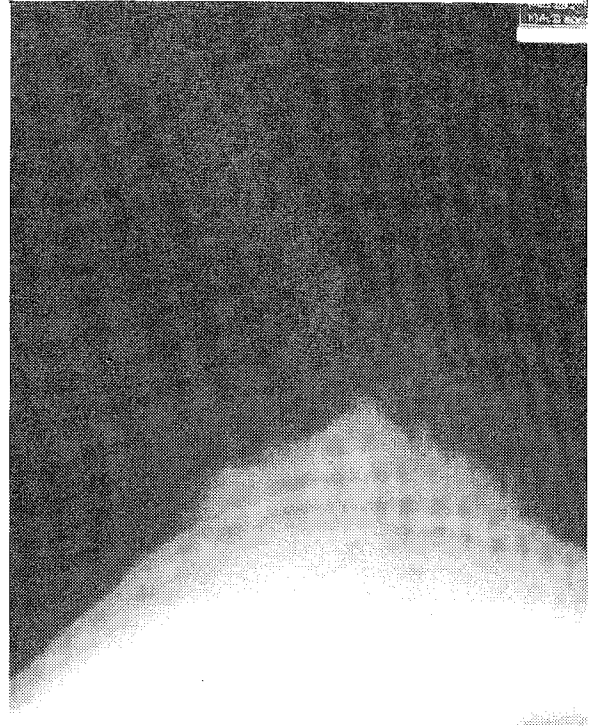


Fig. 3 Plain X-Ray of the abdomen in erect position shows fluid levels in the small bowel and gas shadow in the common bile duct (black arrow).



Fig. 2 Gall stone, removed from pelvic colon (cm.)

patency of cholecysto-colic fistula and elective cholecystectomy was not contemplated.

The same patient was re-admitted four months later with diarrhoea, vomiting and abdominal distention. Vomitus was faecal and foul smelling.

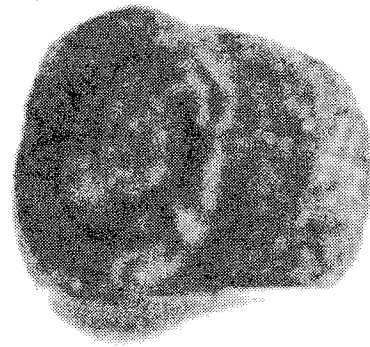


Fig. 4 Gall stone removed from terminal part of the ileum (61 cm from ilio-caecal junction); in cm.

Physical examination revealed she was quite obese, no jaundice, markedly dehydrated, abdominal distention and central abdominal tenderness with incisional hernia. Rectal examination did not find any abnormality in the rectum or pelvis. Erect and supine abdominal X-rays were taken which showed gas in the biliary tree, and distended small bowel loops with fluid levels. After correcting fluid and

electrolytes, laparotomy was carried out through the original scar. There was distended small bowel proximal to the terminal ileum. A hard mass was found about 61 cms proximal to the ileo-caecal valve. Enterotomy was performed just proximal to the stone and the stone was delivered. It was a gall stone, 4 cms in diameter. Search was made to find the cause of the ileus, and cholecysto-duodenal fistula was identified. Remaining intestine was explored but failed to find any more stones. Emergency cholecystectomy was not carried out. The patient made a complete recovery after the operation and was discharged on 16th day of the operation.

Eight weeks later the patient was reviewed and found to be quite well. There was no recurrence of the previous symptoms. Barium meal follow-through X-ray was carried out which failed to show the patency of cholecysto-duodenal fistula. Oral cholecystogram was carried out ten weeks after the operation and no calculus was seen in the gall bladder or in the common bile duct; the gall bladder was poorly functioning and failed to show any patency of the fistula.

As there was no clinical and radiological evidence of patency of the fistula and the patient was quite well and asymptomatic, cholecystectomy was not contemplated. The patient remained well and died five years later of broncho-pneumonia.

DISCUSSION

Recurrent gall-stone ileus is about 5-9%⁵ of total gall-stone obstruction. Eighty per cent of the cases of gall-stone ileus are elderly females in their seventh or eighth decades of life.^{15, 16} Recurrent colonic and small bowel gall-stone obstruction in the same patient is not very common. In this particular case elective cholecystectomy was not contemplated because of the lack of clinical and radiological evidence of patent cholecysto-colonic fistula. Cause of small bowel obstruction in this patient was thought to be due to adhesions as a result of previous operations. It was rather surprise pathology during laparotomy to see an obstruction due to gall-stone impacted in the terminal part of the ileum and was due to weaker peristalsis in the terminal part of the ileum,¹⁷ and probably the narrowest part of the whole of the small intestine. It is to be noted that this patient never had diarrhoea and cholangitis and there was very minimal constitutional disturbance. This condition can be diagnosed by plain X-rays of the

abdomen where there is gas in the biliary tree and the stone can be seen if it is radio opaque (10 - 16% of gall-stones are radio opaque). Otherwise this can be only diagnosed at laparotomy. The combination of findings including obstructive ileus, biliary gas, and ectopic biliary calculus is considered pathognomic of gall-stone obstruction. However, these signs may not be always present in the patients of cholecysto-duodenal and cholecysto-colonic fistula.⁶

Courvoisier in 1890 reported a 44% mortality among 125 patients with gall-stone ileus, but recent years a mortality rate of 15% has been reported.^{8, 9, 10}

Management of gall-stone ileus is primarily surgical.²⁴ In 1922 Pybus competently relieved the obstruction with an enterotomy, closed the duodenal fistula and drained the gall bladder after removing 2 additional stones. Holy¹² and Welch *et al*¹⁴ were the first to complete repair in one stage operation. Berliner and Burson¹³ then proposed one stage operation as the best procedure for gall-stone ileus (primary cholecystectomy, fistulorrhaphy, and relief of intestinal obstruction).

In the literature on recurrent gall-stone ileus, more than half the recurrences occurred within 21 days of the first operation.^{18, 19, 20} In the case described in this paper, gall-stone ileus recurred 4 months after the first operation.

Removal of the stone by emergency laparotomy and colotomy in case of large bowel obstruction and by enterotomy in case of small bowel obstruction with exploration of the remaining intestine in an ill patient is acceptable procedure for the majority of surgeons. Some surgeons perform proximal de-functioning colostomy and removal of stone by colotomy at the site or proximal to obstruction and elective cholecystectomy in later date.^{15, 21, 22} Some surgeons still like to remove the stone by emergency laparotomy, cholecystectomy and repair of the fistula as one stage procedure,^{23, 24} with exploration of the remaining intestine. It depends on the clinical status of the patient, experience and confidence of the surgeon with access to facilities for immediate operative cholangiography.

Management of the fistula is debatable. Ideally, immediate cholecystectomy and repair of the fistula should be performed. But removal of the stone and leaving the fistula alone is acceptable procedure in a frail patient. Large numbers of fistulae usually seal themselves off in due course provided there is no distal bowel obstruction and if the cystic duct is patent. However, some chronic cholecysto-colonic

and cholecysto-duodenal fistulae are associated with weight loss, diarrhoea and less commonly cholangitis;^{25, 26} in such cases elective cholecystectomy and repair of the fistula is mandatory. The initial surgical treatment of the cholecysto-colonic and cholecysto-duodenal fistulae may be confined just to treat the obstruction alone, and wait. As a rule, elective Ba-meal X-ray in later date should be performed as a part of the investigations in case of cholecysto-duodenal fistula. Cholecystectomy and repair is the treatment of choice in case of patent fistula. In absence of patent fistula, elective cholecystectomy is the only definitive treatment. Elective Ba-enema X-ray in case of cholecysto-colonic fistula to be performed, and cholecystectomy with closure of the fistula is the treatment of choice in case of patent fistula.

There have been many reports of increased morbidity in patients treated by only laparotomy and removal of stone alone. The morbidity includes recurrent gall-stone ileus, acute cholecystitis, and recurrent digestive symptoms. As time passes, surgeons are more familiar with the conditions. The earlier diagnosis, improved anaesthesia and better pre and post operative care lower the mortality and encourage surgeons to carry out more radical attack — one stage repair consisting of cholecystectomy, fistula repair and enterotomy with exploration of the remaining intestine. The advantage of this procedure is that it removes the cause of further morbidity, the diseased gall bladder and the patent biliary fistula. However, this procedure should only be attempted in patients who are well controlled with pre-operative intestinal decompression, adequately hydrated, have had a restoration of a serum electrolytes and do not represent a prohibitive risk.

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