Vomiting and constipation in an elderly diabetic woman

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An 80-year-old woman was admitted to William Harvey Hospital on 25 December 1997, with a 3-day history of generalised abdominal discomfort, intermittent vomiting and absolute constipation. Her medical history included hypertension, gall stones and insulin-dependent diabetes mellitus. There was no history of surgery.

On physical examination she was a moderately overweight woman, with mild dehydration, moderate abdominal distension, mild lower abdominal tenderness, normal bowel sounds and no evidence of inguinal or femoral herniae. Rectal examination revealed an empty rectum. Full blood count, urea and electrolytes, liver function test and serum amylase were normal. Her plain abdominal X-ray is shown in the figure.

Questions

- 1 What does this plain abdominal X-ray show?
- 2 What is the most probable diagnosis?
- 3 How would you treat this patient?

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Figure Plain abdominal X-ray

Answers

QUESTION 1

The plain abdominal X-ray shows dilated loops of small bowel and air in the biliary tree.

QUESTION 2

The diagnosis is small bowel obstruction caused by a large gall stone (gall stone ileus).

QUESTION 3

Emergency surgical exploration after optimal re-hydration, intestinal decompression and restoration of any electrolyte deficit. Surgical exploration in this case revealed a large gall stone impacted in the terminal ileum.

Discussion

Gall stone ileus is responsible for 1–4% of cases of mechanical bowel obstruction overall, but it accounts for 24% of bowel obstruction in patients over 70 years of age.¹ The disease occurs more frequently in women than men, with a ratio between 4:1 and 16:1 according to the published literature.^{1–3} Eighty per cent of cases occur in elderly women in their seventh and eighth decade of life.²

Gall stone ileus is a mechanical intestinal obstruction caused by impaction of one or more gall stones within the bowel lumen. The impacted stone commonly originates in the gall bladder. Almost always the stone enters the gastrointestinal tract through a biliary-enteric fistula, usually through a cholecystoduodenal fistula and rarely through a cholecystocolonic fistula.⁴ In 80–90% of cases the stone passes spontaneously without symptoms. The most common site of impaction of the stone is the terminal ileum (60%). It occurs less commonly in the proximal ileum or distal jejunum, and rarely in the duodenum or colon.^{2,4}

Clinical presentation is rarely specific and more than 30% of patients have no history of biliary symptoms. The median time between admission and the operation is 2–4 days.²

Mechanical intestinal obstruction with abdominal pain and vomiting is the most common clinical presentation. Concomitant geriatric diseases are present in up to 80–90% of cases.¹

Rigler's triad of small bowel obstruction, ectopic gallstone and pneumobilia are classical findings on the plain supine abdominal X-ray.¹ The presence of two signs has been considered pathognomonic,³ but is seen only in 30–35% of cases.¹ Computed tomography, with its high contrast resolution, is reported to be more sensitive than plain abdominal radiography in detecting the three components of Rigler's triad.⁵

Management of gall stone ileus is primarily surgical after restoration of the patient to optimal condition by hydration, intestinal decompression, and restoration of the electrolyte balance.³

Surgical treatment depends on the status of the patient and the experience of the surgeon. For the majority of surgeons, a one-stage procedure involving removal of the impacted stone by emergency laparotomy with enterolithotomy is the most acceptable approach. The rest of the bowel should be explored for the presence of another stone. Some surgeons, however, still prefer cholecystectomy and the repair of the fistula as a one-stage or two-stage procedure when the general condition permits, unless it has been clearly demonstrated that no stones remain in the gall bladder.²

The insidious nature of the clinical presentation, and the lack of specific signs of biliary disease, are responsible for delayed diagnosis and high mortality (15%), which is five times that of other causes of bowel obstruction.¹

Final diagnosis

Small bowel obstruction caused by a large gall stone (gall stone ileus).

Keywords: bowel obstruction; gall stone ileus; diabetes

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