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Colo-Duodenal Fistula-An Uncommon Finding In A Man With Malignant Colonic Obstruction.

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Abstract

Background

Colo-duodenal fistula is an uncommon complication of malignant and inflammatory bowel disease, more so with malignant large bowel obstruction. Clinical presentation may be that of the fistula, primary colonic tumour and metastatic disease that may present as an elective or emergency with the later due to late presentation with advanced lesion.

Case presentation

Presented is a case of colo-duodenal fistula in the setting of malignant large bowel obstruction with operative mortality.

Conclusion

Early presentation and diagnosis will improve the overall outcome as operative morbidity and mortality in emergencies arising from complications of malignant large bowel obstruction is high.

Introduction

Colorectal cancer usually presents at the 6th and 8thdecades of life with symptoms of change in bowel habit, bleeding pre rectum, passage of mucus and abdominal pain. Anorexia and weight loss may occur in large or disseminated tumours **[1]**. Colo-duodenal fistula is a rare complication of malignant and inflammatory bowel disease that may present with symptoms from the primary, from the fistula or from metastatic disease **[2]**. Malignant large bowel obstruction caused by colonic adenocarcinoma represents a surgical emergency with increased operative morbidity and mortality **[3]**. We present a 63-year-old male with colo- duodenal fistula in a setting of malignant large bowel obstruction from colonic tumour.

Case presentation

A 63-year-old man presented as a referral from a peripheral center to the emergency department with complaint of abdominal distension and pain of 3 weeks duration, constipation of 2 weeks duration, vomiting and bilateral leg swellings of I week duration. Prior to the presentation, he noticed gradual distension of the abdomen and did not admit to prior alteration in bowel habits or the passage of blood in the stool. He initially had a dull ache which progressed to pain located mainly in the central and upper parts of the abdomen. A week after he noticed that he passed scanty stool that progressed to complete inability to pass stool. This was followed by vomiting of recently ingested food that progressed to a mixture that included faeculent mater and eventually frank faeces. He had no symptoms of cardiac, renal or metastatic disease. Past medical history showed appendicectomy done 23 years ago.

Examination findings revealed, an acute on chronically ill patient in painful distress, pale, afebrile, anicteric, mildly dehydrated with bilateral pitting oedema. He was on intravenous fluid (normal saline) with a urethral catheter that drained concentrated urine.

Vital signs were, Temperature- 36.70C, Pulse rate-104 beats/min., Blood pressure- 120/70mmHg, Respiratory rate of 24 cycles/min. Abdominal examination revealed, distension, generalized tenderness marked at the right upper and lower quadrants, was firm to hard but other parts soft. There was a right upper quadrant mass which was tender and immobile. Liver, spleen and kidneys were unremarkable, bowel sounds were hyperactive. A clinical diagnosis of acute intestinal obstruction secondary to intrabdominal malignancy was made. Investigations revealed a Full blood count result showed, Hb: 11.8g/dl, PCV: 31.4%, Platelets 152 x 103.

Urea/electrolyte/creatinine (mmol/L) result showed: urea-6.0, sodium- 134, potassium– 36, chloride- 101, bicarbonate- 24, creatinine- 83.3. Abdominal ultrasound scan result revealed coarse liver parenchymal echo texture, right intrarenal cortical cyst. Plain abdominal radiograph revealed in the erect and supine films, multiple air-fluid levels- **Figure 1** and dilated loops of bowel showing valvular conniventes- **Figure 2**, respectively.

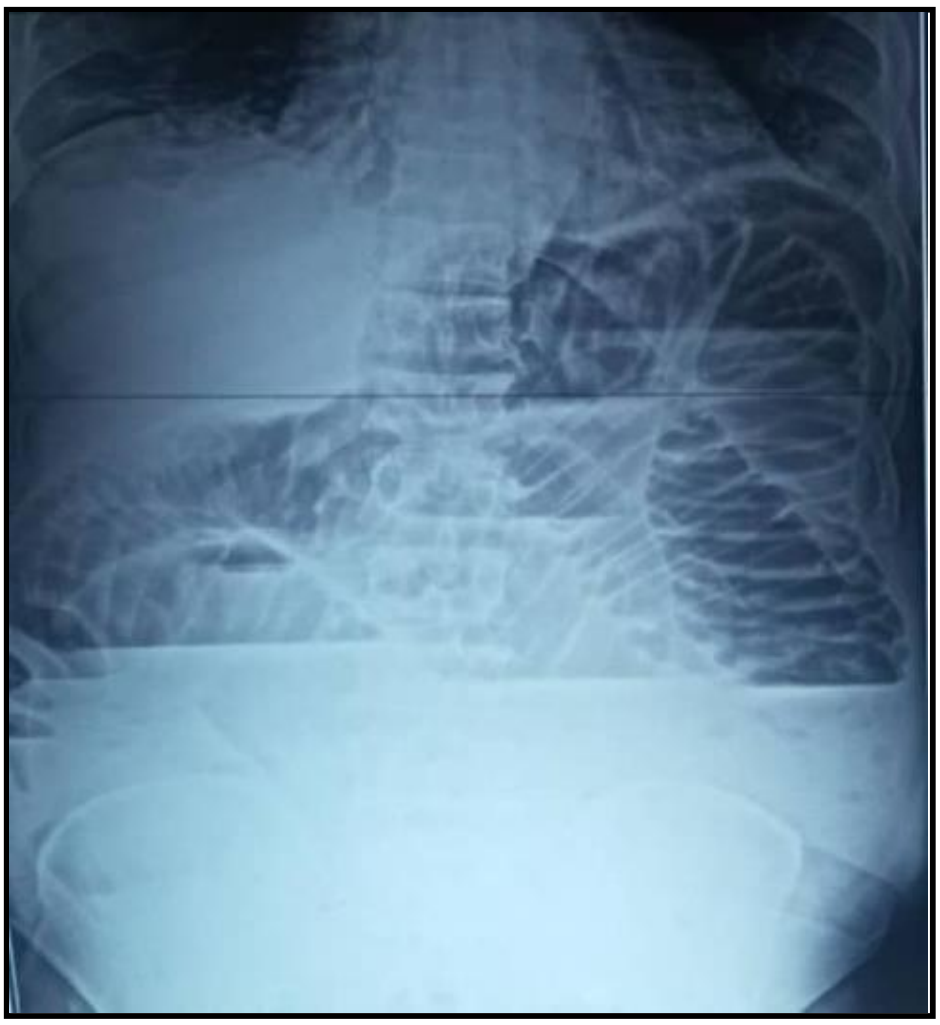

Figure 1: Erect- showing multiple air Fluid levels.

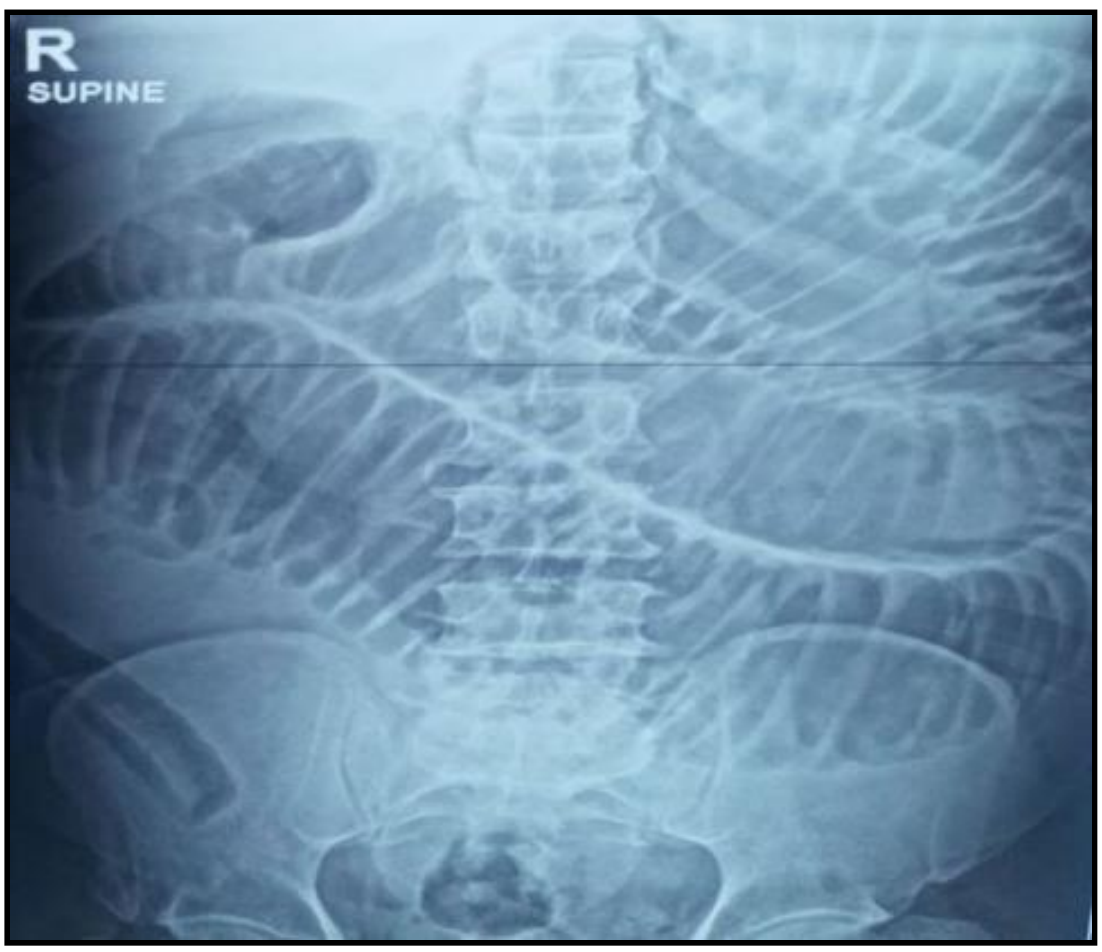

Figure 2: Supine- showing dilated Loops of bowel with valvular Conniventes.

Resuscitative measures were, intravenous fluids administration, nasogastric tube insertion (that drained faeculent matter), antibiotic therapy, analgesia and urethral catheterisation were instituted. The patient exploratory laparotomy with the following findings:

1. Normal peritoneal cavity (no seedings), liver appeared grossly normal.
2. Dilated small bowel loops, dilated caecum and ascending colon.
3. Tubular mass at the hepatic flexure of the transverse colon measuring about 7cm in length adherent to the adjacent inferior surface of the liver, gallbladder, with a fistula between the mass and the first part of the duodenum.
4. Distal to the tumour was normal, empty transverse colon and descending colon.

An intraoperative diagnosis of Colo-duodenal fistula with malignant large bowel obstruction from cancer of the transverse colon was made. He had a right hemicolectomy **(Figure 3)** with resection of the first part of the duodenum (with fistula) with gastroduodenal anastomosis.

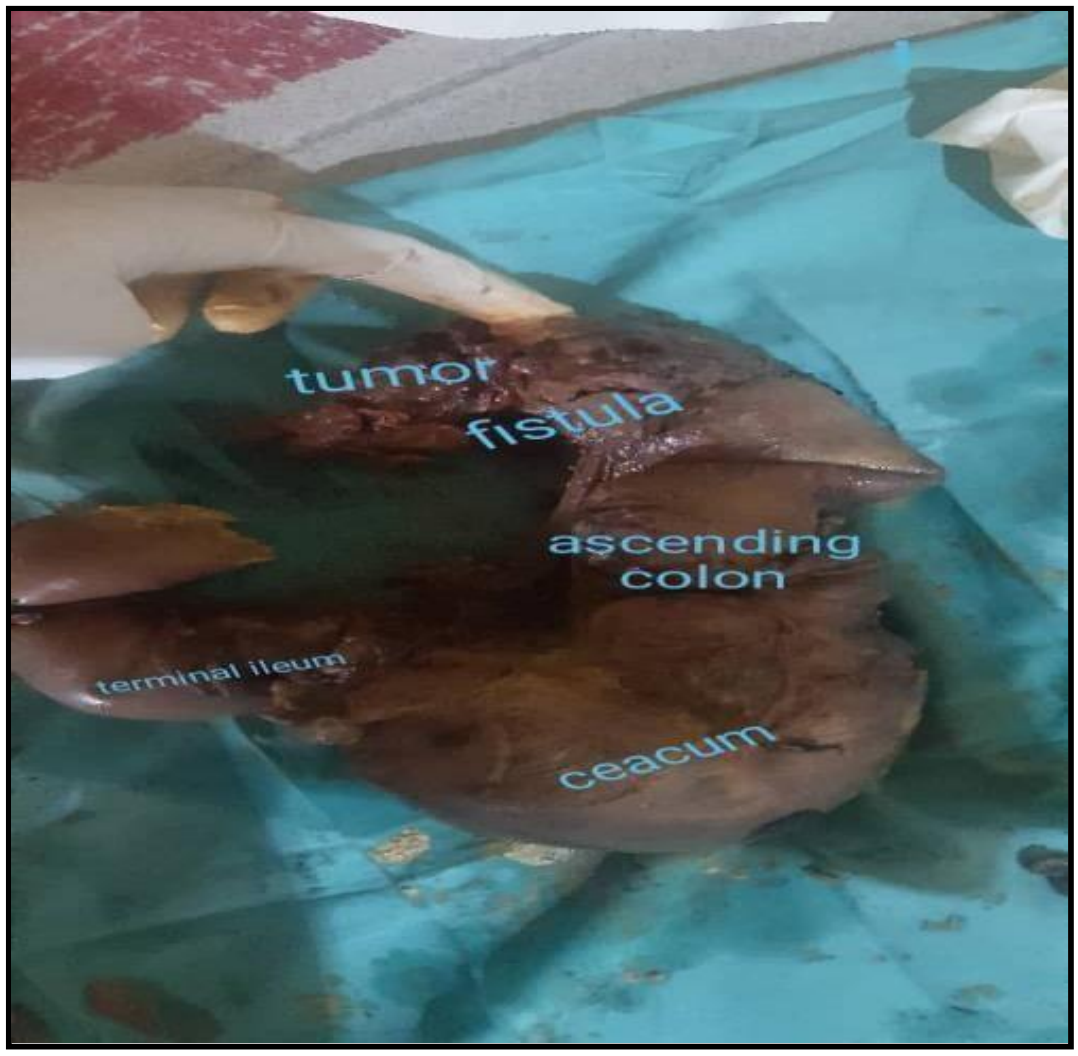

Figure 3: Right hemicolectomy- Pathology specimen (fixed in formalin) showing the retroperitoneal surface with the tumour location.

During the immediate postoperative period, he was admitted in the intensive care unit (ICU). Two hours postoperative period, patient was yet to make urine. Vital signs showed: temperature- 35oC, pulse- 132 beats/min., blood pressure- 92/62mmHg, respiratory rate- 28 cycles/min. Despite attempt at resuscitation, patient continued to deteriorate with intractable shock and died 24 hours post-surgery.

Discussion

It is rare for colonic cancer to invade the duodenum resulting in colo-duodenal fistula. The first reported case was by Haldane in 1862 **[4]**. The patient had a malignant fistula arising from the hepatic flexure as found in our patient. In a report of 1400 cases of right colon cancer, only two cases of malignant colo-duodenal fistula were found thus highlighting the rarity of this complication **[5]**. Report of colo-duodenal fistula is sporadic in literature, and they are usually colonic tumour invading the duodenum rather than duodenal tumours invading the colon from advanced cancer of the hepatic flexure as typified in outpatient **[2]**.

Patients with malignant colo-duodenal fistula present with symptoms from the fistula, from the primary or from metastatic disease. Our patient presented with weight loss, vomiting of faeculent matter from malignant intestinal obstruction **(Figure 4)** as evidenced by dilated bowel proximal to the obstruction located at the hepatic flexure. He did not present with symptom from the fistula as he had no diarrhoea but constipated due to colonic obstruction. The diarrhoea relates to colonic bacterial contamination of the upper intestine rather than pure mechanical effect **[6]**. Vomiting may be faeculent or truly faecal as was evidenced in our patient. It is also suggested that duodenal bile salts have irritating effects on colonic mucosa resulting in diarrhoea **[7]**.

Treatment of colo-duodenal fistula depends on the extent of the primary tumour, presence of metastasis and the general condition of the patient. Late presentation results in malignant large bowel obstruction, a surgical emergency with operative morbidity and mortality **[3]**. In an earlier study in this centre, 41.7% of colorectal cancer presented as large bowel obstruction **[3]**. Our patient presented as an emergency, had right hemicolectomy, duodenal resection and gastroduodenal anastomosis with operative mortality. Malignant large bowel obstruction is a common complication of colorectal cancer which requires prompt diagnosis and treatment **[3]**. There are various curative operations reported which include a right hemicolectomy. Chang treated 20 patients with right hemicolectomy and primary closure of the duodenal defects **[8]**. However, Ellis described using a jejunal loop to close the duodenal wall defect **[9]**. The safety of a single stage procedure has been established, however, endoluminal stenting would convert emergencies to elective cases with better outcomes **[3]**.

Conclusion

Colo-duodenal fistula from colonic primary is rare and management is difficult especially if presentation is an emergency with malignant bowel obstruction as was in our case. Early presentation and diagnosis of primary colonic tumour will improve outcome.

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