

Pelvic abscess formation in perforated carcinoma of the jejunum

Wilfred CG Peh

DMRD, FRCR, FAMS Associate Professor

***Judy WC Ho**

MBBS, FRCS
Senior Medical Officer

Departments of Diagnostic Radiology and
*Surgery, The University of Hong Kong, Queen
Mary Hospital, Hong Kong

Abstract

A 76 year old Chinese woman presented with a pelvic abscess, secondary to perforated carcinoma of the jejunum. Plain abdominal radiograph showed a mottled lesion which corresponded to the site of the perforated tumour seen on CT and confirmed during laparotomy. The clinical and imaging features of carcinoma of the jejunum are briefly reviewed.

Introduction

Carcinoma of the jejunum is a rarely encountered lesion which usually manifests clinically with non-specific signs and symptoms. Abscess formation from its perforation as a presenting feature has, to our knowledge, not been described previously. We report the clinical and radiological findings in such a case.

Case report

A 76 year old Chinese woman first presented to our hospital with a one day history of abdominal pain, most severe over the left lower quadrant. There was no significant past history except for a rather vague history of constipation for one year. Examination revealed an obese and febrile woman. Vital signs were stable. There was generalised abdominal tenderness, most severe over the left lower quadrant, but no

palpable mass. Rectal examination was negative. Her temperature spiked soon after admission. The white cell count was raised at 20.2 g/dL with predominant neutrophilia (18.5 g/dL). Liver and renal function tests were normal, as were serum amylase levels. She was started on intravenous antibiotics with a presumptive diagnosis of diverticulitis.

Plain abdominal radiograph on admission (Figure 1) showed a large rounded

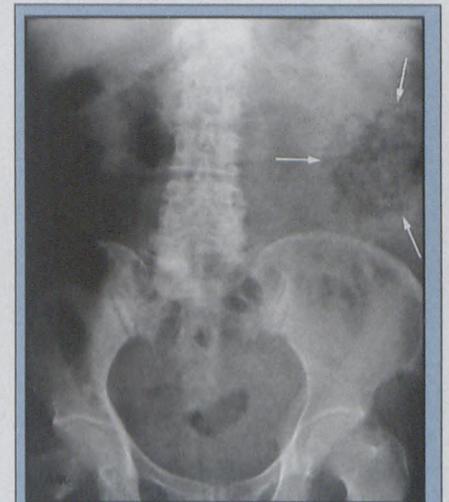


Figure 1: Plain radiograph shows a rounded mottled area (arrows) in the left abdomen.

mottled area in the left upper quadrant, with no evidence of bowel obstruction. CT done three days later confirmed the presence of a large mass of soft tissue density at this site (Figure 2a). This mass contained oral contrast indicating communication with the bowel lumen. Air and debris-like material within the mass correlated with

Pelvic abscess in jejunal carcinoma

from page 21

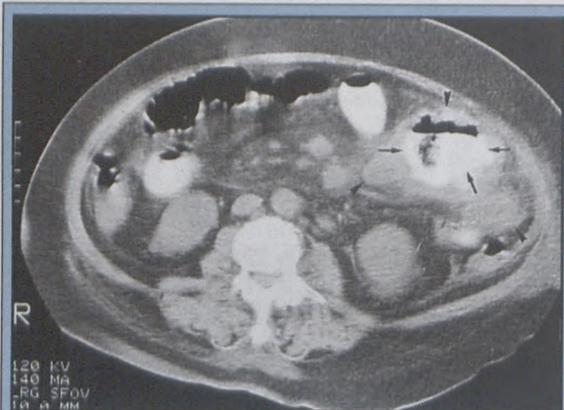


Figure 2(a): CT of upper abdomen shows a large soft tissue mass with irregular borders (arrowheads). It contains barium, debris and air (arrows).

the mottled appearance on plain radiographs. The outer margins of this mass were irregular, with ill-definition of the adjacent intraperitoneal fat and muscle layers of the left abdominal flank (Figure 2b). This was continuous with a large fluid collection in the left lower abdomen and pelvis (Figure 2c).

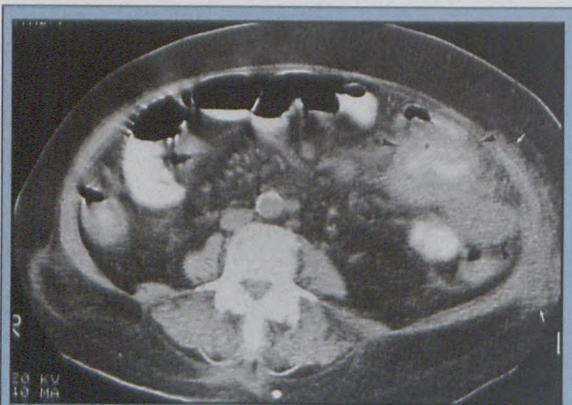


Figure 2(b): CT of abdomen taken 2 cm more distally shows the same mass (arrowheads), streaky opacities extending into the surrounding fat and ill-definition of the left abdominal muscle wall (arrows). Note sharp definition of the right muscle layers, in comparison.

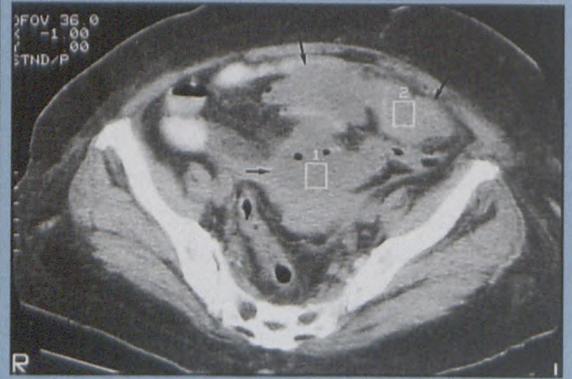


Figure 2(c): CT at level of the pelvic brim shows large fluid collections (arrows).

Ultrasound also confirmed the presence of a large pelvic fluid collection.

At laparotomy, a polypoidal tumour, measuring 8 cm in diameter, was present in the proximal jejunum. Its base was perforated and sealed with omentum. Loculated abscesses were present at the left iliac fossa and

the pelvis, each containing about 50 ml of pus. There was extensive lymphadenopathy along the course of the superior mesenteric artery. Small bowel resection with end-to-end anastomosis and abscess drainage was done. On histopathological examination, the tumour had infiltrated through the full thickness of the bowel wall into the surrounding subserosal adipose tissue. The lesion was extensively ulcerated, and the serosa showed changes of peritonitis. The diagnosis was undifferentiated carcinoma of the jejunum.

Her postoperative recovery was complicated initially by wound infection. She then developed bile-stained vomiting about four weeks later. Water soluble contrast meal showed complete obstruction at the third part of the duodenum (Figure 3), which was shown to be due to massive lymphadenopathy on CT (Figure 4). The rapid progression of lymphadenopathy subsequently produced bilateral ureteric obstruction. She finally died seven weeks after the operation.



Figure 3: Contrast instilled via a Ryle's tube shows extrinsic compression and obstruction of the duodenal loop.

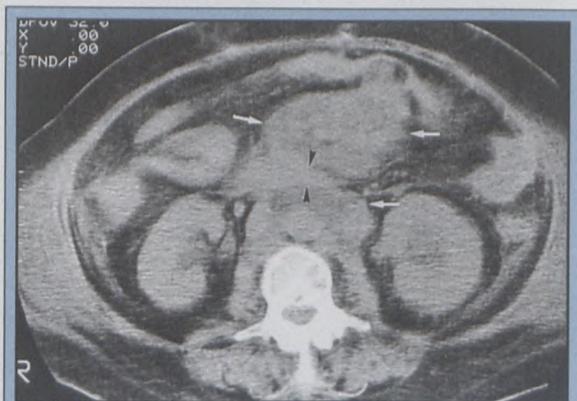


Figure 4: CT of the upper abdomen shows massive lymph nodes (arrows) compressing the distal duodenum (arrowheads).

Discussion

Primary tumours of the small bowel constitute a mere 1-2% of all gastrointestinal malignancies. Carcinoma of the jejunum is rarer still, comprising 0.22% of 11 438 cases of gastrointestinal tumours in one series¹. The rarity of jejunal carcinoma is supported in other large studies of small bowel tumours.²⁻⁹ Signs and symptoms of small bowel malignancy are vague and non-specific, often being present for months or years before the diagnosis is made.^{1,5,7,8} The more frequent presentations of this tumour are pain, anorexia, weight loss, bleeding or small bowel obstruction.^{3,4,9} Perforation is a rare presenting feature of adenocarcinoma of the jejunum, occurring in only one patient in a series of 31 cases.⁹ There were no instances of perforation in two other large series,

from page 22

comprising 16 and 32 patients, respectively.^{3,4} It was interesting to note that in a pathological study of 10 cases of jejunal adenocarcinoma, all 10 cases showed transgression through the bowel wall, with direct extension of tumour into the mesentery in 4 cases.⁹ It is therefore surprising that perforation and its sequelae are not manifested more frequently, as in our patient where perforation was followed by infection and abscess formation.

The plain abdominal radiograph is usually unhelpful for the diagnosis of jejunal carcinoma unless a complication such as obstruction or perforation had occurred. The unusual plain film appearance of a large mottled area was probably produced by debris and air within an abscess cavity adjacent to the site of perforation. This feature was not recognised at the time the radiograph was taken as it was thought to be due to faecal material. In retrospect however, this was unlikely as its shape was too circular and no other adjacent faecal-filled bowel loops were evident radiologically.

The large soft tissue mass seen on CT was produced by a combination of the tumour mass, abscess cavity and surrounding adherent omentum. The CT appearance of jejunal carcinoma has previously been recognised as a polypoidal or annular mass causing luminal narrowing.^{10,11} Although extra-luminal growth and infiltration of the surrounding fat have been

described in tumours, the irregularity of the mass outline and streaky ill-definition of the adjacent fat in our case was due to an infective process. The path of spread of infection was clearly demonstrated on CT by fuzziness of both the inner and outer walls of the left abdominal wall musculature, leading to fluid collections in the left iliac fossa and pelvis. These findings of localised peritonitis and pus were subsequently confirmed at surgery.

Initial CT failed to detect mesenteric lymph node invasion in our patient, reflecting the experience of other investigators.¹¹ Moreover, lymph node enlargement in jejunal carcinoma is unusually not as bulky as that characteristically seen in lymphoma.¹⁰ A remarkable feature of our case was the rapid onset and progression of massive lymphadenopathy, which eventually led to her unexpectedly quick demise. We are unable to explain the aggressive behaviour of this tumour. CT in combination with small bowel enema has been advocated for the detection and preoperative staging of this tumour.^{11,12} Small bowel enema is more sensitive than conventional small bowel follow-through examination in detecting jejunal carcinomas, manifest as polypoidal intra-luminal masses, annular strictures or ulcerated masses. Indirect evidence of tumour includes dilated bowel loops and fistulas.¹² In our case, CT also illustrated the unusual presentation of pelvic abscess formation in jejunal carcinoma.

References

1. Martin RG. Malignant tumours of the small intestine. *Surgical Clinics of North America* 1986;66:779-85.
2. Ebert PA, Zuidema GD. Primary tumours of the small intestine. *Archives of Surgery* 1965;91:452-5.
3. Wilson JM, Melvin DB, Gray GF, Thorbjarnarson B. Primary malignancies of the small bowel: a report of 96 cases and review of the literature. *Annals of Surgery* 1974;180:175-9.
4. Bridge MF, Perzin KH. Primary adenocarcinoma of the jejunum and ileum. A clinicopathological study. *Cancer* 1975;36:1876-87.
5. Sager GF. Primary malignant tumours of the small intestine. A twenty-two year experience with thirty patients. *American Journal of Surgery* 1978;135:601-3.
6. Freund H, Lavi A, Pfeiffermann R, Durst AL. Primary neoplasms of the small bowel. *American Journal of Surgery* 1978;135:757-9.
7. Gupta S, Gupta S. Primary tumours of the small bowel: a clinicopathological study of 58 cases. *Journal of Surgical Oncology* 1982;20:161-7.
8. Barclay THC, Schapira DV. Malignant tumors of the small intestine. *Cancer* 1985;51:878-81.
9. Williamson RCN, Welch CE, Malt RA. Adenocarcinoma and lymphoma of the small intestine. Distribution and etiologic associations. *Annals of Surgery* 1983;197:172-8.
10. Dudiak KM, Johnson CD, Stephens DH. Primary tumors of the small intestine: CT evaluation. *American Journal of Roentgenology* 1989;152:995-8.
11. Laurent F, Raynaud M, Biset JM, Boisserie-Lacroix M, Grelet P, Drouillard J. Diagnosis and categorization of small neoplasms: role of computed tomography. *Gastrointestinal Radiology* 1991;16:115-9.
12. Bessette JR, Maglente DDT, Kelvin FM, Chernish SM. Primary malignant tumours in the small bowel: a comparison of small-bowel enema and conventional follow-through examination. *American Journal of Roentgenology* 1989;153:741-4.