

## High-grade small bowel obstruction in an HIV-positive patient

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**Section:** Abdominal imaging

**Area of Interest:** Small bowel

**Procedure:** Diagnostic procedure

**Imaging Technique:** CT

**Special Focus:** Obstruction / Occlusion Case Type:

Clinical Cases

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**Patient:** 52 years, male

### Clinical History:

A 52-year-old male patient with a longstanding history of HIV infection, currently with good immune function (443 CD4 cells/mm<sup>3</sup>) and negative viraemia under antiretroviral therapy, presented with vomiting, progressive epigastric pain for some weeks, and weight loss.

At physical examination he was apyretic, dehydrated, with distended abdomen and moderate palpation tenderness.

### Imaging Findings:

Recently, he underwent upper digestive endoscopy and double- contrast barium enema with negative findings. Abnormal laboratory findings include 3.8 mg/dl serum creatinine, mildly increased serum lipase and C-reactive protein.

Clinical suspicion of acute bowel obstruction was investigated with urgent contrast-enhanced multidetector CT (MDCT). Marked dilatation of the duodenum, jejunum and proximal ileum with abundant endoluminal fluid was identified, consistent with mechanical obstruction. The transition point to distal collapsed bowel corresponded to a short narrowed ileal segment with moderate (8mm) circumferential enhancing mural thickening. Ascites, lung, and solid organ lesions were not present.

At laparotomy, an abrupt calibre change was found in the middle ileum, due to hard-consistency lesion. Segmental bowel resection with ileo-ileal anastomosis was performed. Surgical specimen pathology diagnosed T3N1 infiltrating adenocarcinoma.

After an early postoperative MDCT acquisition, follow-up imaging detected the appearance of a solid mesenteric mass with ill-defined margins, consistent with local neoplastic recurrence.

### Discussion:

Due to the increasing prevalence of Human Immunodeficiency Virus (HIV) infection and the improved patients' survival provided by antiretroviral therapy, clinicians and radiologists are increasingly confronted with HIV-related opportunistic diseases, often in an emergency setting. In addition to the usual causes encountered in immunocompetent patients, the differential diagnosis of abdominal pain in HIV and Acquired Immunodeficiency syndrome (AIDS) patients includes a wide range of neoplastic and infectious opportunistic disorders. Furthermore, HIV / AIDS patients commonly display subtle or nonspecific symptoms and physical findings, masked by concurrent conditions and poor immune function, therefore diagnostic imaging plays a crucial role in their triage [1-5].

Although plain abdominal films are extensively used as the initial examination in patients with suspicion of surgical

acute abdomen, due to their limited sensitivity the vast majority of occurrences are nowadays investigated with contrast-enhanced multidetector CT (MDCT). With intrinsic contrast provided by intraluminal fluid and gas, volumetric MDCT with routine multiplanar reformations easily confirms presence and severity of small bowel obstruction. Furthermore, multiplanar MDCT imaging allows identification of the transition point between collapsed bowel and upstream dilatation, of the most probable intrinsic, endoluminal, or extrinsic cause, and of further complications such as strangulation [6].

As in the general population, in HIV-positive patients postsurgical adhesions represent the leading cause of small bowel obstruction. Alternatively, abdominal tuberculosis, Mycobacterium avium complex, and bowel involvement by opportunistic neoplastic disorders such as Kaposi's sarcoma and non-Hodgkin lymphoma may be encountered [2, 4]. In the general population, primary cancer of the small bowel is very uncommon, as it accounts for 2% of all gastrointestinal tumours, and presents with intestinal occlusion in 36% of patients. At CT, small bowel carcinoma appears as a segmental luminal narrowing, mural thickening, or mass located at the transition point. Such lesions that should be identified on at least two planes may be more or less pronounced, asymmetric, or irregular [6, 7]. As this case exemplifies, in the increasingly aging HIV / AIDS population the possibility of an uncommon, non-AIDS defining malignancy underlying abdominal complaints should always be considered.

**Differential Diagnosis List:** Ileal adenocarcinoma causing small bowel obstruction. HIV infection., HIV-related lymphoma, Kaposi's sarcoma, Mycobacterium avium intracellulare complex (MAC) infection, Intestinal tuberculosis

**Final Diagnosis:** Ileal adenocarcinoma causing small bowel obstruction. HIV infection.

#### References:

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**Figure 1**

a



**Description:** Coronal reformatted images (a, b) easily identify the transition point between markedly dilated upstream small bowel with abundant endoluminal fluid, represented by a short narrowed ileal segment with enhancing mural thickening (arrows). **Origin:** Tonolini M, Department of Radiology, "Luigi Sacco" University Hospital – Milan (Italy)

b



**Description:** Coronal reformatted images (a, b) easily identify the transition point between markedly dilated upstream small bowel with abundant endoluminal fluid, represented by a short narrowed ileal segment with enhancing mural thickening (arrows). **Origin:** Tonolini M, Department of Radiology, "Luigi Sacco" University Hospital – Milan (Italy)

c



**Description:** Axial images (c, d) focused on the transition point confirm a narrowed ileal segment with moderate (8mm), enhancing circumferential mural thickening (arrows). **Origin:** Tonolini M, Department of Radiology, "Luigi Sacco\" University Hospital – Milan (Italy)

d



**Description:** Axial images (c, d) focused on the transition point confirm a narrowed ileal segment with moderate (8mm), enhancing circumferential mural thickening (arrows). **Origin:** Tonolini M, Department of Radiology, "Luigi Sacco\" University Hospital – Milan (Italy)

e



**Description:** Note upstream dilatation of most small bowel, including the duodenum. Ascites, lymphadenopathies, and solid organ lesions are not present. **Origin:** Tonolini M, Department of Radiology, "Luigi Sacco\" University Hospital – Milan (Italy)

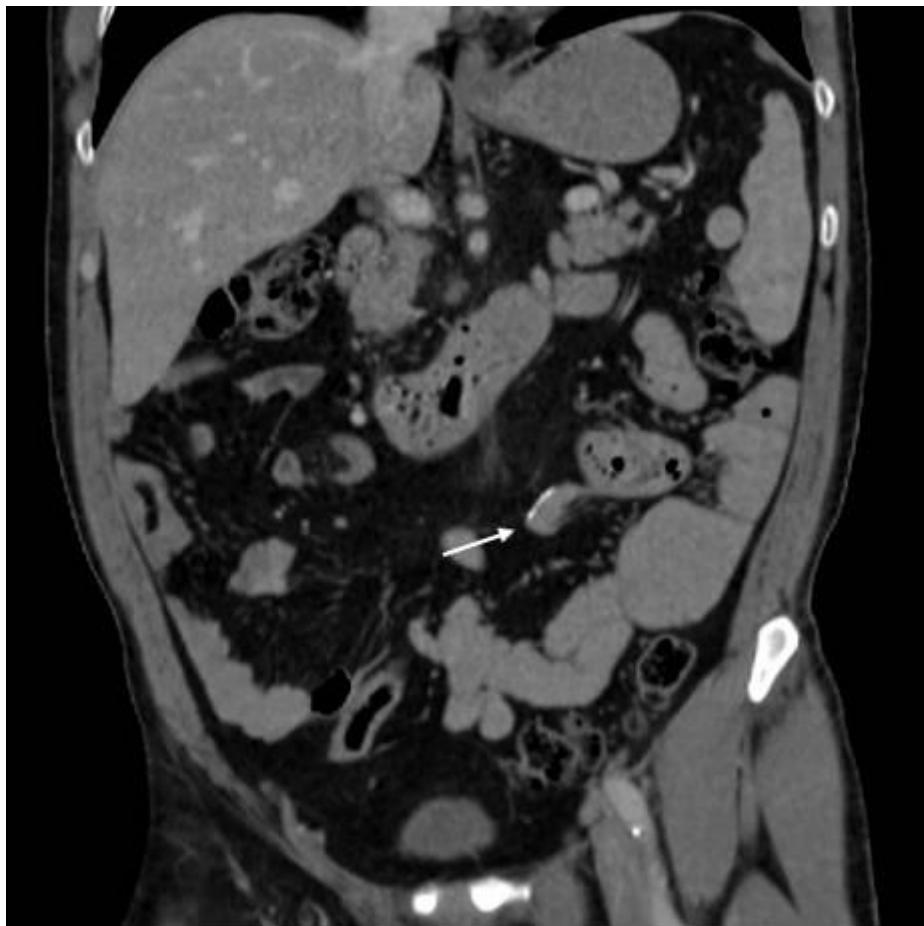
**Figure 2**

a



**Description:** Axial (a) and coronal reformatted (b) images show normal postoperative appearance following segmental small bowel resection. Note hyperdense suture (thin arrows) in the site of ileo-ileal anastomosis. **Origin:** Tonolini M, Department of Radiology, "Luigi Sacco" University Hospital – Milan (Italy)

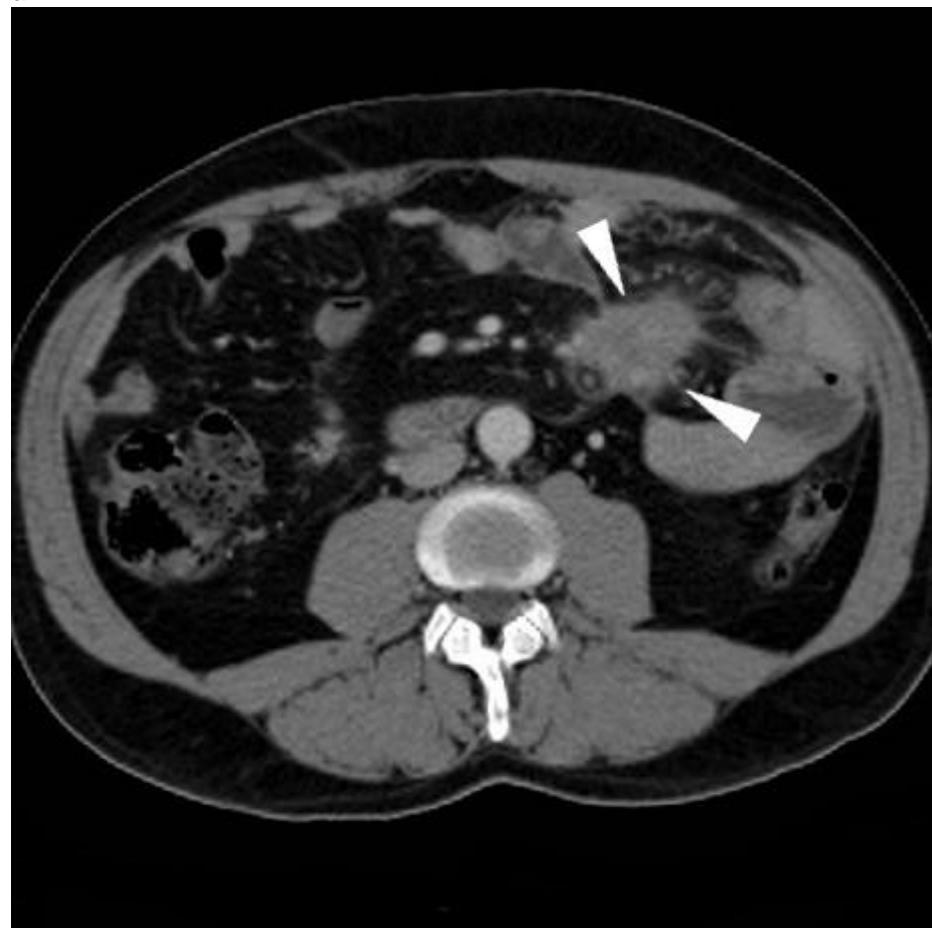
b



**Description:** Axial (a) and coronal reformatted (b) images show normal postoperative appearance following segmental small bowel resection. Note hyperdense suture (thin arrows) in the site of ileo-ileal anastomosis. **Origin:** Tonolini M, Department of Radiology, "Luigi Sacco" University Hospital – Milan (Italy)

**Figure 3**

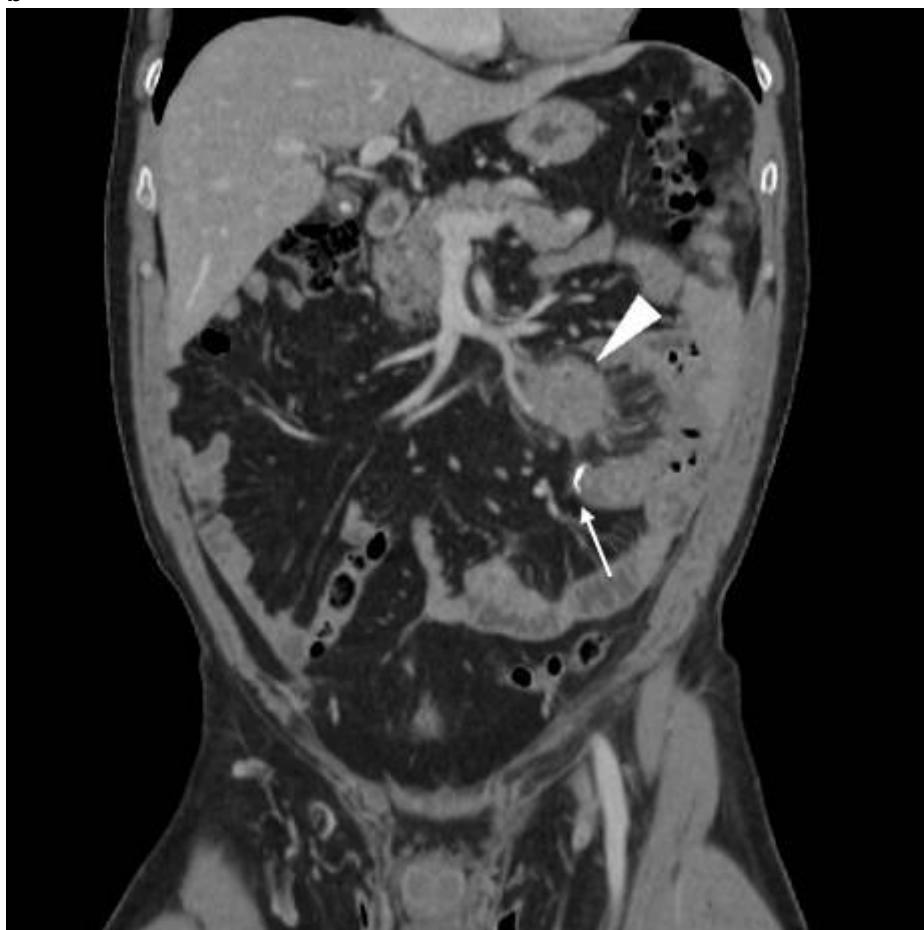
a



**Description:** Axial (a) and coronal reformatted (b, c) images show appearance of a soft-tissue density mesenteric mass (arrowheads) with ill-defined margins, consistent with local neoplastic recurrence.

**Origin:** Tonolini M, Department of Radiology, "Luigi Sacco\" University Hospital – Milan (Italy)

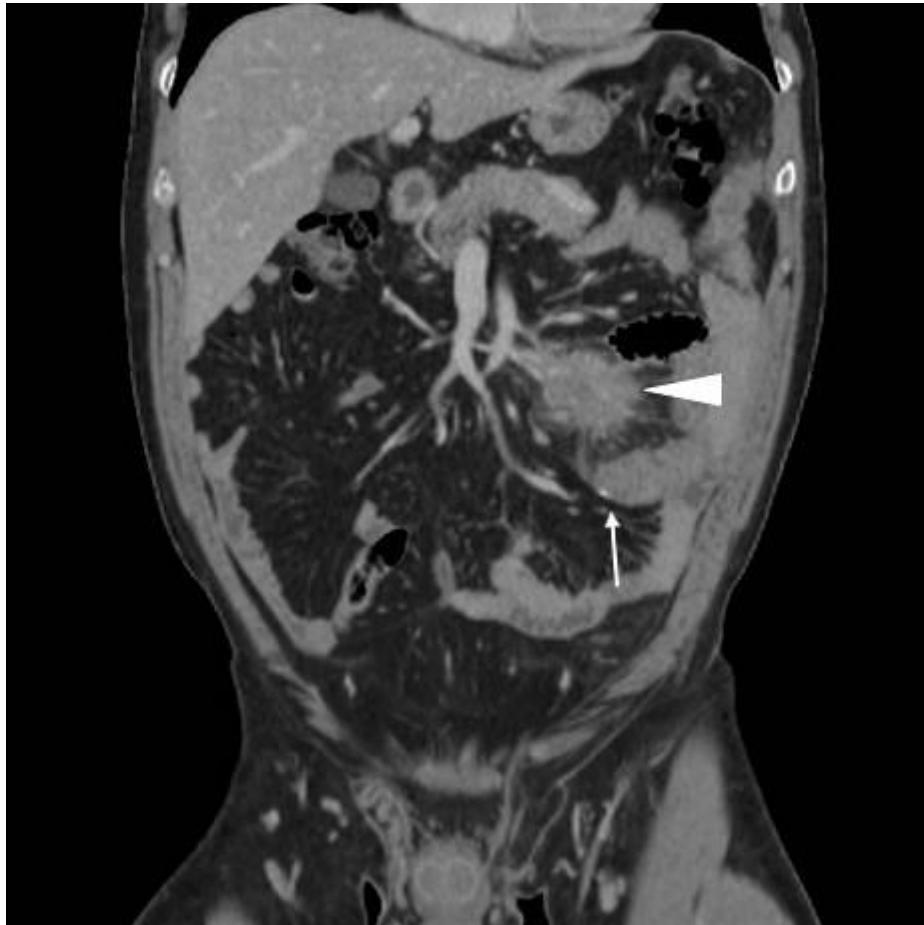
b



**Description:** Axial (a) and coronal reformatted (b, c) images show appearance of a soft-tissue density mesenteric mass (arrowheads) with ill-defined margins, consistent with local neoplastic recurrence.

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c



**Description:** Axial (a) and coronal reformatted (b, c) images show appearance of a soft-tissue density mesenteric mass (arrowheads) with ill-defined margins, consistent with local neoplastic recurrence.

**Origin:** Tonolini M, Department of Radiology, "Luigi Sacco\" University Hospital – Milan (Italy)