Case 13784

Eurorad

Bowel ischaemia

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Section: Abdominal imaging
Area of Interest: Abdomen Gastrointestinal tract Liver
Abdominal wall
Procedure: Contrast agent-intravenous
Imaging Technique: CT
Special Focus: Acute Ischaemia / Infarction Dilatation
Case Type: Clinical Cases
Authors: Gul, Z. MD, Marklund, M. MD, PhD.
Patient: 64 years, male

Clinical History:

64-year-old man was admitted with fever and diarrhoea as chief complaints after receiving the first round of capecitabin as adjuvant chemotherapy following sigmoid resection. He quickly developed fulminant sepsis and necrosis of the GI canal.

Imaging Findings:

A contrast-enhanced CT scan of the abdomen was performed to locate the focus of possible infection. Air in the wall of distal oesophagus, stomach and the small intestines was noted. Dilatation with air fluid levels in the small bowel was also seen. Air was present in both the mesenteric and the hepatic veins. The large intestine showed contrast enhancement in the wall especially on the left side but no air. There was free fluid around the liver but no intraperitoneal free air. All these findings suggested ileus/obstruction of the small intestines and necrosis in the gastrointestinal tract as a complication of sepsis.

Discussion:

Capecitabin is a common chemotherapeutic agent used as first line treatment for oesophageal, gastric, colonic and breast cancer [1, 2, 3]. Its safety profile and response rate are considerably better than alternative agents used before, like 5-FU, with less complaints of diarrhoea, vomiting, alopecia and stomatitis, but there are more reported cases of hand-foot syndrome which results in redness, tenderness and possible peeling of palms and soles [4, 5]. Neutropenia and sepsis are also well documented but rare complications of capecitabin treatment. The majority of patients who develop neutropenia and sepsis in the aftermath of severe diarrhoea do not survive [6]. Treatment is mainly supportive with almost all patients needing intensive care.

The difficulty diagnosing this fatal complication effectively is the fact that every patient who receives chemotherapy will experience side effects like nausea, vomiting and diarrhoea. Generally, a diarrhoea with more than 4 stools per day is considered severe where admission to the hospital is indicated. It is important to inform patients and their relatives clearly so the drug can be stopped as early as possible.

This patient had only been diagnosed with venous invasion from the colonic cancer. He had no lymph node involvement or distant metastases. Capecitabin as monotherapy is indicated in such patients to reduce the risk of recurrence correlated to venous invasion. The patient had a relatively good prognosis after sigmoid resection. He developed increasingly severe diarrhoea after only the first round of capecitabin and was febrile at presentation with persistent severe diarrhoea. His leukocyte count kept falling despite interventions and he developed fulminant

sepsis which subsequently resulted in necrosis of the bowel, end organ failure and ultimately death.

It is therefore important, as radiologists, to look keenly for signs of bowel ischaemia, even mild ones, in a patient receiving chemotherapy, especially capecitabin. Vomiting and diarrhoea are often looked at as being expected side effects of chemotherapy, perhaps rightly so, but it is important to look for signs of bowel ischaemia and perforation in such patients to give them better treatment opportunities in cases where these are not just harmless side effects but signs of a very deadly complication.
Differential Diagnosis List: Neutropenic fever and fulminant sepsis after cytostatic treatment., Gastroenteritis, Postoperative ileus

Final Diagnosis: Neutropenic fever and fulminant sepsis after cytostatic treatment.

References:

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Figure 1

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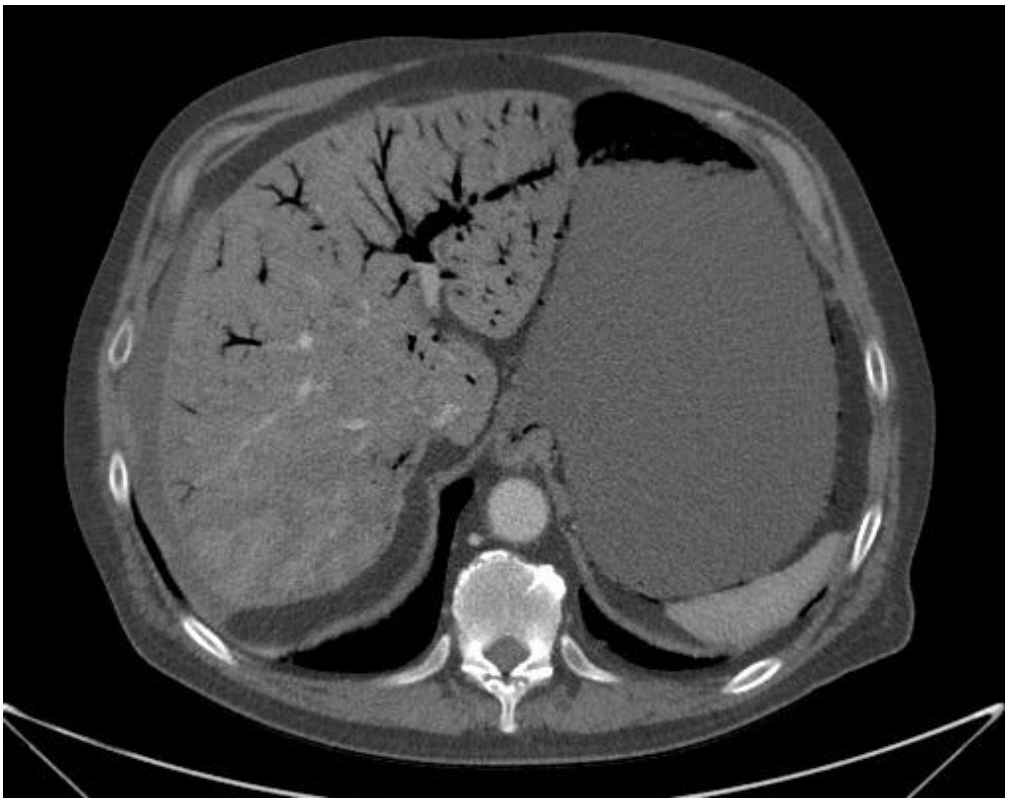

Description: Axial section showing air in the hepatic veins. **Origin:** Department Of Radiology Zealand University Hospital Denmark.

Figure 2

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Description: Coronal section showing air in the dilated intestinal walls as well as in the hepatic veins.
Origin: Department Of Radiology, Zealand University Hospital.

Figure 3

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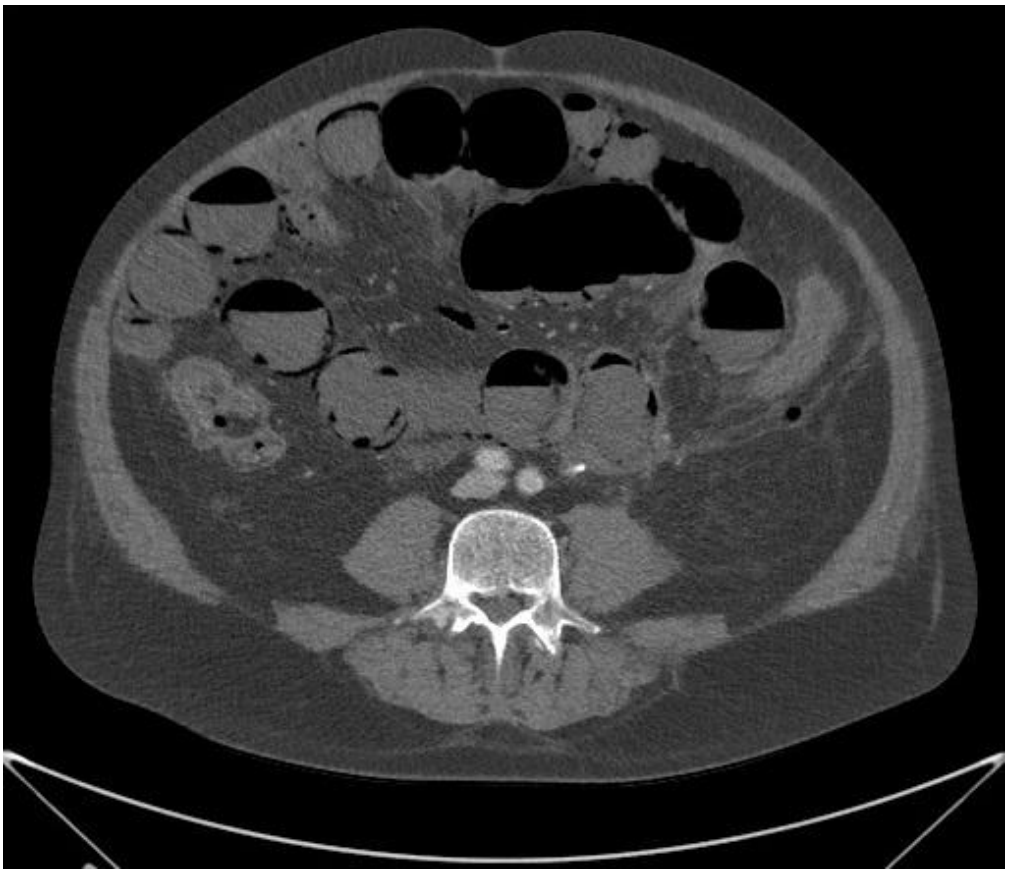

Description: Axial CT image showing multiple air fluid levels in the intestines and dilatation of the intestinal walls. **Origin:** Department Of Radiology Zealand University Hospital Denmark

Figure 4

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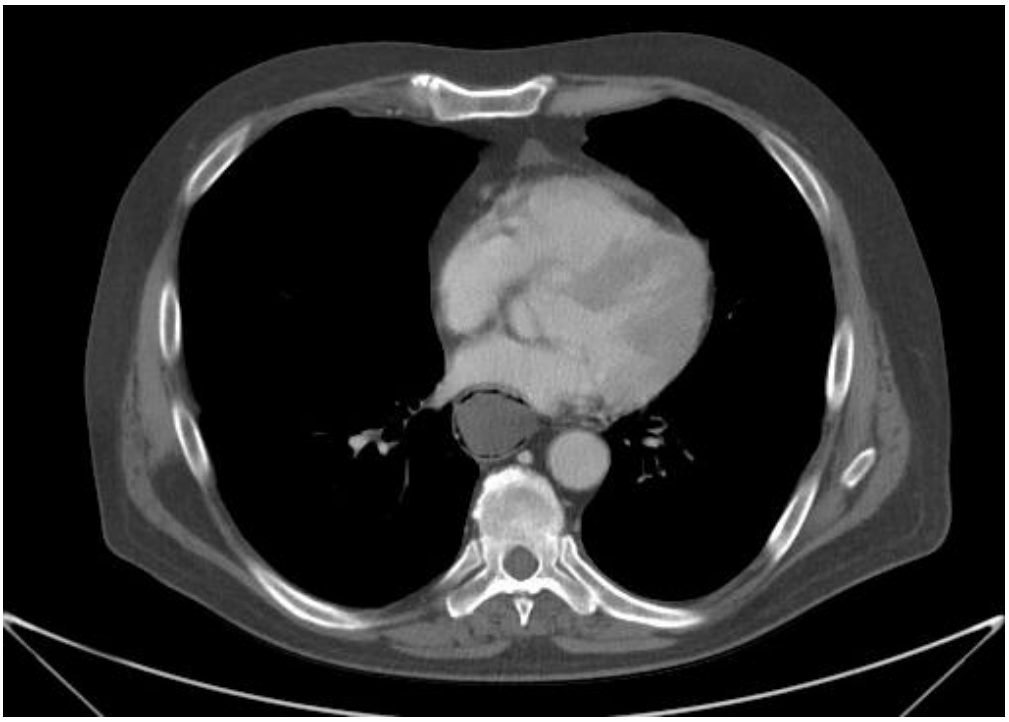

Description: Axial section showing air in the wall of the oesophagus. **Origin:** Department Of Radiology Zealand University Hospital Denmark