

Small bowel obstruction due to a metastasis of a bronchial carcinoma.

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Section: Abdominal imaging

Area of Interest: Abdomen Gastrointestinal tract Small bowel Emergency

Procedure: Diagnostic procedure

Imaging Technique: Conventional radiography

Imaging Technique: CT

Imaging Technique: Image manipulation / Reconstruction

Special Focus: Acute Dilatation Metastases Neoplasia

Case Type: Clinical Cases

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Patient: 73 years, male

Clinical History:

A 73-year-old man with a history of primary lung cancer developed signs of intestinal obstruction, i.e. vomiting and abdominal discomfort during hospitalisation for surgical resection of the lung tumour. The patient received previously neoadjuvant chemotherapy in order to reduce the tumoral mass.

Imaging Findings:

Erect plain abdominal X-ray showed moderately dilated jejunal loops with some gas-fluid levels in the left upper quadrant and a gasless rectosigmoid. A few days later an abdominal ultrasound showed a homogeneous epigastric mass. At the level of this mass a caliber change was detected with proximally dilated small bowel loops and distally collapsed loops. The stomach was distended by a large amount of fluid. Subsequent CT demonstrated typical signs of obstruction and a solid, homogeneously enhancing mass originating from the gut. Resection of this mass was performed. The histopathological examination revealed a metastasis of a sarcomatoid adenocarcinoma, compatible with an isolated metastasis of the known lung tumour. PET scan prior to the resection of the lung lesion did not show this lesion.

Discussion:

Small bowel obstruction (SBO) is common in an oncological setting. The majority of cases involve postoperative adhesions or peritoneal carcinomatosis. Less frequently radiation enteritis and intussusception occur. Another more uncommon cause is bowel wall metastasis. As primary tumour, a lobular breast carcinoma, a malignant melanoma or a pulmonary adenocarcinoma is often found.

The diagnosis of metastases as the cause of SBO is often difficult. The symptoms are non-specific and can be misattributed to much more common aetiologies (e.g. adhesions). GI metastases from certain tumours, such as malignant melanoma and breast cancer can occur after many years of remission. Lastly, bowel wall metastases can represent the first site of recurrence.

Definitive diagnosis of a SBO caused by a metastasis requires a biopsy. The diagnostic approach should be the

same as the general approach in SBO. Plain abdominal X-ray is diagnostic in 50-60%. Furthermore, this examination is sensitive only for high-grade obstruction. In daily practice, plain abdominal X-ray is mostly used for follow-up of a low- grade obstruction, for which a conservative approach is recommended and to exclude an acute abdomen. CT is considered to be the golden standard in the evaluation of SBO. Obstruction is present when there are dilated bowel loops proximally and normal or collapsed bowel loops distally of the transition point. The severity can be assessed by the degree of distal collapse and proximal bowel dilatation. In subacute or low-grade obstruction it is possible to detect the small-bowel feces sign as a result of delayed transit. This sign is defined by the presence of feculent matter mingled with gas bubbles in the lumen of dilated loops. It is important to recognise the obstruction in order to prevent a delay in medical intervention. Moreover, CT can assess the extramural areas and the transition point which is often important in finding the cause of the obstruction.

Treatment consists of solving the acute obstruction and the control of metastatic disease. Surgical intervention is often required. It is important to note that resection of an obstructed segment by an isolated metastasis can sometimes lead to a long-term survival.

In patients with a SBO where imaging reveals a solid bowel wall mass as underlying cause, radiologists should think of metastasis especially when there is a previous history of breast cancer, melanoma or lung cancer.

Differential Diagnosis List: Small bowel obstruction due to metastasis of a bronchial carcinoma., **INTRINSIC CAUSES:**, • Inflammatory diseases: Crohn's, Tuberculosis, Eosinophilic gastroenteritis, • Tumours: GIST, Adenocarcinoma, Carcinoid, Lymphoma, Secondary tumours, • Vascular lesions: radiation enteritis, Ischaemia, • Haematoma: trauma, Coagulation disorders, • Intussusceptions, **EXTRINSIC CAUSES:**, • Adhesions, • Hernias, • Extrinsic tumours, • Endometriosis, • Haematomas, **INTRALUMINAL CAUSES:**, • Gallstones, • Bezoars, • Foreign bodies

Final Diagnosis: Small bowel obstruction due to metastasis of a bronchial carcinoma.

References:

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Figure 1

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Description: Moderately dilated jejunal loops with some gas-fluid levels in the left upper quadrant and a gasless rectosigmoid. **Origin:**

Figure 2

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Description: Small bowel obstruction due to a solid, homogeneously enhancing bowel wall mass. Dilated small bowel loops proximal to the mass and collapsed loops distally. **Origin:**

Figure 3

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Description: Ileal mass, clearly originating from the intestinal wall. Dilated stomach and proximal small bowel loops filled with fluid and collapsed distal ileal loops and collapsed large bowel. **Origin:**