Suspected advanced stage ovarian cancer in a 68-year-old woman – differential diagnosis

Clinical History:
A 68-year-old woman presented to the gynaecology outpatient department with a 1-month history of increasing pelvic pain, difficulty urinating and bowel irregularities including constipation and diarrhoea. Past medical history included surgery for cystocele repair 20 years before, the last routine gynaecology check-up two years before was normal.

Imaging Findings:
Transvaginal ultrasound identified a large mass in the right adnexal region. Laboratory results included elevated CA 125 (562 U/mL) and CEA (85 µg/L). CT demonstrated a 15 cm large complex pelvic mass with cystic and solid components. The mass showed broad based contact to the sigmoid colon suggesting large bowel infiltration [Fig. 1]. In addition fine reticular omental pattern could be identified in the left upper abdomen and was accompanied with moderate amount of ascites, raising suspicion of peritoneal carcinomatosis [Fig. 2]. Furthermore a suspicious 3.5 cm large hypodense hepatic lesion in segment VII was identified adjacent to the right hepatic vein [Fig 3]. MRI evaluation of the liver confirmed the 3.5 cm large lesion and detected an additional suspicious 1.3 cm large lesion in segment VIII [Fig. 3]. Liver specific contrast media MRI suggested metastasis. Subsequently, biopsy of the pelvic mass was performed under sonographic guidance.

Discussion:
Ovarian cancer is diagnosed in up to 75% of cases in advanced stages FIGO III and IV and typically associated with peritoneal carcinomatosis. This is mainly due to a long preclinical period with unspecific symptoms [1]. Important criteria for ovarian malignancy are size above 4 cm, complex architecture including solid and cystic components, necrosis, papillary projections or tumour vessels. Ancillary findings such as ascites, peritoneal implants and lymph node enlargement increase the probability for ovarian cancer [2, 3].

Liver involvement in ovarian cancer consists in most cases of liver surface metastasis. Parenchymal liver lesions arising from haematogenous spread are rare and found in less than 1% of cases. Thus, whenever parenchymal liver lesions in women presenting with a large pelvic mass are identified, dedicated liver imaging such as MRI should be performed. In case of parenchymal liver metastasis diagnosis of ovarian cancer should be questioned.

An estimated 5-15 % of malignant ovarian lesions are ovarian metastasis [4]. Ovarian metastasis most often originates from stomach, colon, breast, pancreatic or bile cancer and is in up to 38% of cases detected before primary site cancer [5]. Metastases to the ovaries often include bilateral involvement and tend to preserve the contour of the ovary displaying smooth margins. They present complex cystic and solid or predominantly solid architecture and may be identical to primary ovarian malignancy making definite diagnosis sometimes impossible.
Metastatic lesions from the stomach and the breast are more solid and often present with central necrosis, whereas ovarian metastases from colon cancer are more cystic [6]. However, misinterpretation of ovarian metastasis as primary ovarian cancer may have harmful consequences for the patient such as inappropriate surgery or chemotherapy. In order to prevent misinterpretation, image guided biopsy is a safe and minimally invasive diagnostic tool that delivers a definitive histologic diagnosis [7]. As in our case image biopsy can alter management of the patient and the presented pelvic mass was biopsied under sonographic guidance. Histologic analysis revealed the diagnosis of adenocarcinoma of the sigmoid colon. Thus, suspected infiltration of the sigmoid colon turned out to be colon cancer of the sigmoid colon with large unilateral ovarian metastasis, peritoneal carcinomatosis and liver metastasis. Subsequently the patient’s case was discussed in an interdisciplinary tumour panel for adequate therapy. 

**Differential Diagnosis List:** Cancer of the sigmoid colon with ovarian and liver metastases., Ovarian cancer, Ovarian metastases from gastrointestinal tract malignancy or breast cancer, Rare inflammatory conditions such as tuberculosis or actinomycosis, Tubo-ovarian abscess

**Final Diagnosis:** Cancer of the sigmoid colon with ovarian and liver metastases.

**References:**


Description: Transaxial contrast enhanced CT image (a) and sagittal reformations (b) show a large pelvic mass with solid (white arrows) and cystic components (*) with contact to the sigmoid colon (black arrows). Supplying ovarian pedicle (arrowhead). Origin:
Figure 2

a

Description: Transaxial contrast enhanced CT image (a) and coronal reformations (b) reveal subtle reticular omental opacities in the left upper abdomen (arrows) and small amount of ascites (*). Origin:
Description: Transaxial contrast enhanced CT image (a) and MRI with liver-specific contrast media (b) and T2-SPAIR-MRI (c) depict a larger suspicious lesion in segment VI (arrow) and a smaller lesion in segment VIII (arrowhead). Ascites (*). Origin: