Ovarian metastases from colorectal cancer

Published on 22.09.2014

DOI: 10.1594/EURORAD/CASE.12099
ISSN: 1563-4086
Section: Genital (female) imaging
Area of Interest: Colon Genital / Reproductive system
female Abdomen
Procedure: Diagnostic procedure
Imaging Technique: CT
Imaging Technique: MR
Special Focus: Metastases Neoplasia Case Type: Clinical Cases
Authors: Serpa, Sara; Silva, David; Amaral, Rui; Simões, Marta; Fernandes, Otília
Patient: 49 years, female

Clinical History:
A patient with irregular abundant menses and microcytic hypochromic anaemia present to ER with increasing abdominal pain in the left iliac fossa that had started a month before, worsening during the past 4 days. She also refers diarrhoea alternating with constipation.
The laboratory examination revealed high CRP and discrete leukocyturia.

Imaging Findings:
Enhanced and non-enhanced CT and MRI examinations were performed.
CT showed bilateral adnexal large peripherally enhancing multicystic masses, the largest measuring 60 x 40 mm.
Exuberant diverticulosis and irregular enhancing parietal rectum-sigmoid thickening was also depicted.

MRI revealed:
Extensive nodular thickening of the sigmoid colon, with enhancement, and marked parietal heterogeneity measuring at least 6 cm in longitudinal extension. This lesion transposed the serosa and was associated with a mesosigma extension/ lymph node conglomerate with about 4 x 2.3 cm. Several pericentimetric mesosigma and prominent retroperitoneal lymph nodes, with less than 7.5 mm in short-axis diameter.
Sigmoid diverticulosis upstream of neoplastic lesion and involving also the distal descending colon. Moderate volume of pelvic ascitic fluid.
Bilateral adnexal large complex masses, composed of thin-walled and thick-walled irregular nodular cysts, with solid heterogeneous enhancing components, coexisting with small nodules with high signal in FS T1, due to haemorrhagic components.

Discussion:
Ovarian metastases occur in about 6% of primary colorectal cancer patients undergoing surgery [1, 2]. These lesions occur mostly when the primary colorectal cancer (CRC) is already in an advanced state, and distant metastases to other sites are frequently found together [3].
The most common primary tumours metastasizing to ovaries are those from the breast, pancreas, and gastrointestinal tract cancers, also commonly referred to as Krukenberg’s tumours [4].
In this case, the presumptive diagnosis of Krukenberg’s tumours was confirmed by the anatomopathological
examination. Misreading the metastasis as a primary tumour can compromise the therapeutic options, leading to adverse consequences to the patient [1, 2]. Preoperative diagnosis is difficult, despite the advances in general imaging, due to the absence of specific clinical and radiological features that could discriminate between primary or secondary tumours [1, 4]. Although a gastrointestinal symptom can lead us to the primary tumour, it isn't rare to have only gynaecological symptoms at presentation [5]. Generally, ovarian metastases are synchronous rather than metachronous [1]. The spreading mechanisms from the ovarian metastases are unclear. Haematogeneous spread is likely to be the main mechanism [3, 5], but some authors refer lymphatic and transcoelomic dissemination as a common mechanism of spread. The latter is sustained by synchronized peritoneum involvement in many cases, but when the metastatic tumour is in a non-superficial position, transcoelomic spread seems improbable [3]. Beside this spectrum of dissemination presentations, some women who present to CCR surgery have isolated ovarian metastases (approximately 3%) [3]. As stated before, differentiating between a primary ovarian cancer and a colon cancer disseminated to the ovaries can be difficult. Some imaging features that help in the differential diagnosis, in favour of colon cancer spreading to the ovaries rather than an ovarian primary, are: bilateral lesions, mass with sharp margins, mass with an oval shape, and T2W hypointense solid components [1, 4, 6]. The literature doesn't state a strong correlation between a specific colon segment and ovarian metastases, and in fact a primary tumour originating in all parts of the colon may disseminate to the ovaries. Hence, the natural frequency from the primary tumour is the most important determinant for the radiologist to check for the site of the primary tumour. Some studies state that there is no relationship between ovarian metastasis and the size of primary CRC [3]. The overall prognosis is poor and aggressive surgery can be an option but in the presence of peritoneal or liver metastases the median survival time is short, and a palliative approach can be the recommended option [2, 5].

**Differential Diagnosis List:** Ovarian metastases from colorectal cancer, Ovarian carcinoma, Ovarian metastases from colorectal cancer

**Final Diagnosis:** Ovarian metastases from colorectal cancer

**References:**


Figure 1

**Description:** Non-enhanced axial pelvic CT image  
**Origin:** Department of Radiology, Hospital S. José, CHLC, Portugal 2014
Figure 2

Description: Contrast-enhanced axial pelvic CT image
Origin: Department of Radiology, Hospital S. José – CHLC, Portugal, 2014
Figure 3

Description: Contrast-enhanced axial pelvic CT image Origin: Department of Radiology, Hospital S. José – CHLC, Portugal, 2014
Figure 4

Description: Contrast-enhanced coronal abdominopelvic CT image. Figures 1 to 4 – CT shows bilateral adnexal large peripherally enhancing multicystic masses, the largest measuring 60 x 40 mm. Exuberant diverticulosis and parietal irregular enhancing rectum-sigmoid thickening. Origin: Department of Radiology, Hospital S. José – CHLC, Portugal, 2014
Description: Axial T1W pelvic image Origin: - Department of Radiology, Hospital S. José – CHLC. Portugal, 2014
**Figure 6**

**Description:** Axial T1W pelvic image  
**Origin:** Department of Radiology, Hospital S. José – CHLC, Portugal 2014
Figure 7

Description: Axial T2W pelvic image Origin: Department of Radiology, Hospital S. José – CHLC, Portugal 2014
Description: Axial T2W pelvic image Origin: Department of Radiology, Hospital S. José – CHLC, Portugal 2014
**Figure 9**

*Description:* Coronal T2W pelvic image *Origin:* Department of Radiology, Hospital S. José – CHLC. Portugal 2014
Figure 10

Description: Sagittal T2W pelvic image Origin: Department of Radiology, Hospital S. José – CHLC, Portugal 2014
Figure 11

Description: Axial enhanced fat-suppressed T1W pelvic image Origin: Department of Radiology, Hospital S. José – CHLC, Portugal 2014
Description: Figures 5-12 demonstrate extensive sigmoid colon thickening and ascitic fluid. Adnexal masses with thin and thick walled cysts, some show solid enhancing components and two nodules with high FST1 signal, assumed to be haemorrhagic. Origin: Department of Radiology, Hospital S. José – CHLC, Portugal 2014