Malignant mixed Mullerian tumor of the Fallopian tube

We present the case of a female patient, 69 years old, with past history of breast tumour, recurring for asthenia, anorexia and weight loss with approximately 4 months of evolution with associated increased volume of the abdomen. Imaging Findings:

A 69 years old female patient recurred to the hospital with asthenia, anorexia and weight loss with increased severity over the last 4 months. She also complained of increased volume of the abdomen. No other sings or symptoms were present. In her personal medical history relevance was made to breast cancer.

After laboratory work-up, which was normal, and ultrasound examination that revealed a mass in the pelvis, the patient was referred to a MRI examination.

At MRI, an almost entirely solid and heterogeneous enhancing mass was found in the right adnexal region, presenting just some small areas with hyperintense signal in T2 sequences (Fig.1,2), due to necrotic content. The mass showed irregular and lobulated contours (Fig.1,2,3,4), measuring 17x14x14cm and extending and contacting with the anterior and right lateral face of the uterus. Left adnexa was normal. Ascites was also present (Fig.1,2).

Discussion:

Primary malignant tumour of the fallopian tube is one of the most rare malignancies of the female genital tract, accounting for only 0.3% of all gynaecological tumours. Of this, adenocarcinoma is the most frequent, being leiomyosarcoma, carcinosarcoma and malignant mixed Mullerian tumours exceedingly rare [1-3].

The tumours of the Fallopian tubes generally concern postmenopausal women, most commonly during the sixth decade of life. Typical presentation includes abdominal or pelvic pain and abnormal genital bleeding [1-3].

In the literature, the reports of Fallopian tube tumours usually describe them as relatively small and lobulated solid mass with soft tissue attenuation at CT and hyperintense signal in T2 sequences, showing enhancement after contrast medium administration. Sometimes areas of high signal intensity are seen representing small cysts [1-3]. Other associated radiological findings are described, such as intrauterine fluid collection, peritumoural ascites and hydrosalpinx.

In our case, MRI examination however showed a large lobulated mass in pelvic region, with 17x14x14cm, solid and
heterogeneous, enhancing after gadolinium administration, in the right adnexal region.

Considering the clinical history and the imaging findings (lesion appearance and associated findings) the differential diagnosis includes primary ovarian malignancy as well as metastases, besides tubal pathology.

Primary ovarian malignancy can have a genetic basis in 10% of the cases, mostly related to mutations in BRCA gene, which leads to an increased susceptibility to both breast and ovarian cancer. Women with BRCA mutations can have a 66-85% lifetime risk of breast cancer and a 15-65% lifetime risk of ovarian cancer for patients with BRCA1 mutations and 10-20% for patients with BRCA2 mutations [4-6]. Most primary ovarian cancers most commonly appear as cystic masses, frequently large, however, despite being an uncommon presentation, they can appear as solid masses, usually with necrotic areas present.

With a past history of breast cancer, a mass in this location could also be related to metastatic disease. Breast cancer, colon cancer, gastric cancer and lymphoma are the most frequent neoplasms to metastasize to this location [7]. Features considered typical of metastatic lesions include bilateral ovarian masses and a predominately solid appearance [4,7] however, some studies could not find a difference statistically significant between the bilateral occurrence of secondary ovarian neoplasms versus primary neoplasms [7]. The appearance of the metastatic lesions is related to the primary tumor location, being most commonly solid in gastric, endometrial and breast cancer and a mixture of cystic and solid areas in colon cancer [8].

Imaging findings however can be too similar to accurately allow a distinction between a primary or secondary ovarian neoplasm [7] and the clinical history, such as a known primary site of malignant tumor, could help in this distinction. Fallopian tube tumors, due to the rare frequency, are often not suspected and usually diagnosed at surgery.

The patient was submitted to hysterectomy and bilateral anexectomy, revealing the tubal nature of the lesion. Surgery is the treatment of choice for this pathology and adjuvant chemotherapy can be used for more advanced stages [9].

**Differential Diagnosis List:** Malignant mixed Mullerian tumor of the Fallopian tube.

**Final Diagnosis:** Malignant mixed Mullerian tumor of the Fallopian tube.

**References:**


Chang WC et al. (2006) CT and MRI of adnexal masses in patients with primary nonovarian malignancy. AJR 176:1433-1466


Description: Coronal (a), sagital (b) and axial (c) T2. Mass (square) in the pelvis, in the right adnexa region, next to the uterus (arrow). Ascites is present (circle). Origin:
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Figure 2

Description: Axial T2 with fat suppression. Mass (square) in the right adnexa region. Ascites is present (circle). Origin:
Description: Coronal (a) and axial (b) T1. Mass (square) in the pelvis, in the right adnexa region.
Origin:
Description: Coronal (a) and axial (b) T1. Mass (square) in the pelvis, in the right adnexa region.
Origin:
Description: Axial T1 after gadolinium administration showing diffuse and heterogeneous uptake.
Origin: