A retroperitoneal malignant fibrous histiocytoma
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Clinical History:

A 41-year-old male patient with uneventful past medical history, presented with a long standing (several years) unusual, painless sensation in his left lumbar region.

Imaging Findings:

The patient was admitted to our institution to study his increased sensation at the left lumbar region. He underwent the following exams.

Plain film of the abdomen: no morphostructural bone alterations. Some calcification can be seen in the left flank region, apparently inside a roundish abdominal formation compressing the psoas muscle and displacing the distal descending colon medially.

Abdominal ultrasound: large expansive formation (10cm diameter) in the left retroperitoneal space characterized by a mixed structure with coarse calcification inside and signs of lesional vascularization.

Computed Tomography (CT): CT scan before administration of iodinated contrast shows a rounded retroperitoneal mass lesion compressing the psoas muscle with some calcification. CT scan after administration of iodinated contrast shows a non homogeneous attenuation and poor contrast enhancement. The mass contains areas of necrosis. Some small lesions in the liver that needed MRI to be characterized.

MRI: Characterized the liver lesions as angiomas. It also exclude the presence of fatty tissue into the retroperitoneal mass.

Discussion:

Retroperitoneal primitive tumors are a heterogeneous group of tumors that originate in connective, vascular, nervous or muscular tissues, or in embryonic residues; they are usually malignant (85%). They mainly affect men, 40-60 years of age.

Generally these tumors grow slowly and are usually of insidious onset; for this reason they are often very large at the time of diagnosis (in 50% of cases they have a diameter greater than 10cm). In rare cases they are metastatic at the moment of diagnosis.

Malignant fibrous histiocytoma (MFH) is one of the most common types of soft tissue sarcomas in adults. Its incidence increases with age. The majority of patients are older than 50 years of age.

There are four major variants of MFH recognized today: storiform-pleomorphic (the most common), myxoid, giant cell and inflammatory. The myxoid type of MFH (also known as myxofibrosarcoma) accounts for one-third of all MFH cases. It was first described by several authors in the late 1970s, and was identified based on its gross distinct gelatinous appearance, with a variable amount of myxoid stroma adjacent to the cellular areas visible microscopically.

The most common primary sites are the extremities (77%), trunk (15%) and retroperitoneum (8%). Treatment is
usually resection and radiation therapy for local control, supplemented by chemotherapy for prevention of recurrence and treatment of micrometastatic disease. Factors believed to favorably influence recurrence rates and metastasis in myxoid MFH include: small size, superficial location, increased proportion of the myxoid component and low grade. The patient underwent surgery to remove the mass.

Histology shows a malignant fibrous histiocytoma

At radiological analysis, MFH usually manifests as a well-defined, smooth or lobular soft tissue mass. CT usually reveals heterogeneous attenuation and enhancement. Large masses, which usually contain areas of hypodensity, are suggestive of malignancy. Large areas of necrosis, which develop especially in leiomyosarcomas and malignant histiocytomas, cause the CT numbers to drop to the water range. The attenuation value reflects the nature of the tumor tissue, so it can help to distinguish MFH from fatty tumors like lipomas and liposarcomas. Although CT is nonspecific in many cases, a number of CT features and clinical findings may suggest specific diagnoses when present: presence of calcification in malignant fibrous histiocytoma; presence of fat in a mass lesion of heterogeneous density in liposarcoma; large regions of necrosis in Leiomyosarcoma (but also other tumor types may contain necrotic regions); calcified tumor in a child in neuroblastoma; hypervascularity of hemangioma and hemangiopericytoma; catecholamine excess and paraaortic location in paraganglioma; homogeneous, low density of neurofibroma; homogeneous, fat density of lipoma; and characteristic mixed components of teratoma.

A knowledge of the range of CT appearances and various clinical settings for this rare group of neoplasms should assist the radiologist in making an appropriate CT interpretation when one of them is encountered.

**Differential Diagnosis List:** Malignant fibrous histiocytoma

**Final Diagnosis:** Malignant fibrous histiocytoma

**References:**

**Figure 1**

**Description:** some calcification (yellow arrow) can be seen in the left flank region, apparently inside a roundish abdominal formation compressing the psoas muscle and displacing the distal descending colon medially **Origin:**
Figure 2

**a** Description: Coronal reconstruction which localizes the mass

**b** Description: Lateral reconstruction which localizes the mass
Description: MRI T2 images exclude the presence of fatty tissue into the mass. **Origin:**

Description: MRI T2 images exclude the presence of fatty tissue into the mass. **Origin:**
**Figure 4**

**a**

**Description:** Unenhanced CT shows a well-defined soft tissue mass with some calcifications. **Origin:**

**b**

**Description:** Arterial phase. The mass doesn't have conspicuous arterial vascularization. **Origin:**
**Description:** Venous phase.
CT reveals heterogeneous attenuation and enhancement. This large mass contains areas of necrosis which cause the CT numbers to drop to the water range. **Origin:**

**Description:** Delayed phase.
CT reveals heterogeneous attenuation and enhancement. This large mass contains areas of necrosis which cause the CT numbers to drop to the water range. **Origin:**