A large retroperitoneal pelvic leiomyoma: spectrum of findings with US, CT and MRI

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Section: Abdominal imaging
Imaging Technique: Ultrasound
Imaging Technique: CT
Imaging Technique: MR

Case Type: Clinical Cases
Authors: Kailidou E*, Katsiva V**, Athanassopoulou A*, Machairiotis C***, Tibishrani M**
Patient: 65 years, female

Clinical History:

One year history of abdominal pain in the lower abdomen. Physical examination demonstrated a palpable mass in the left lower quadrant.

Imaging Findings:

The patient was referred to our hospital with one year history of an abdominal pain in the lower abdomen. Her clinical history was otherwise unremarkable. Physical examination demonstrated a palpable mass in the left lower quadrant of the abdomen. Laboratory results were normal.

The ultrasound study of the abdomen revealed a heterogenous echogenic mass at the pelvis. The uterus was normal for the patient’s age.

CT showed a large solid mass at the left lower abdomen, occupying the left pelvis, measuring 10.5 x 7.5 x 9.5 cm. The mass filled the pelvis between the left sidewall and the sacrum posteriorly. The mass was adjacent to the posterolateral wall of the urinary bladder, the left lateral surface of the uterus and the left lateral wall of the sigmoid colon. The mass demonstrated abnormal contrast enhancement.

MRI of the abdomen demonstrated that the mass was retroperitoneal, separate from the uterus. The extent of the mass and the displacement of the uterus, vagina, urinary bladder were shown either. The diagnosis of a retroperitoneal presacral mass was suggested. The diagnosis of a sarcoma could not be excluded.

At surgery, a well-circumscribed, encapsulated solid mass was found. The mass was excised and the retroperitoneum was explored. Pathological examination revealed leiomyoma with no evidence of mitotic activity.

The patient’s postoperative course was uneventful.

Discussion:

Most retroperitoneal smooth muscle tumors are believed to be malignant, and leiomyomas are considered very rare. Benign tumours of smooth muscle are common in the genitourinary and gastrointestinal tracts, but retroperitoneal localization is uncommon and leads to misdiagnosis. There are only few, mostly clinical or radiological, case reports
in the literature. Leiomyomas, benign smooth muscle tumors, are usually located within the uterus. At times they may become adherent to surrounding structures, acquire an auxiliary blood supply, and become detached from the uterus; they are then termed parasitic leiomyoma. Retroperitoneal location of leiomyomas is very uncommon. Uterine leiomyoma can be usually differentiated from other solid pelvic masses by ultrasonography. CT can only show the extent and the displacement of the adjacent anatomical organs. MRI has been proved useful in the diagnosis of ultrasonographically indeterminate solid pelvic masses. Diagnostic criteria for leiomyoma on MRI include the presence of a solid pelvic mass adjacent to the uterus and a mass that is predominantly low signal intensity or isotense compared with the normal myometrium. MRI assists the operative planning of the mass. The differential diagnosis of benign pelvic retroperitoneal masses includes nonovarian teratomas, benign nerve sheath tumors (neurilemomas-schwannomas and neurofibromas), angiomxyomas, hemangiopericytomas, desmoid tumors, and rarely pheochromocytomas (Middeldorpf tumor). Malignant tumors include sarcomas, lymphomas, and metastatic disease. The main differential diagnostic challenge in the cases of well-differentiated retroperitoneal smooth muscle tumor is to rule out leiomyosarcomas. Retroperitoneal leiomyosarcomas can be primary tumors or metastases from other organs, especially from the uterus. The mitotic rate, the presence of atypia, and coagulative tumor necrosis have been used as criteria, and tumors with such features in any combination have a high risk of recurrence and metastasis. The tumor size, as a suggested criterion in the differential diagnosis, is not helpful, as demonstrated by the very large size of some leiomyomas. In our case the anatomical location of the mass was highly unusual. The MRI findings, the low signal intensity and the isotense appearance in comparison with normal myometrium, suggested the presence of a leiomyoma.

**Differential Diagnosis List:** A retroperitoneal pelvic leiomyoma

**Final Diagnosis:** A retroperitoneal pelvic leiomyoma

**References:**

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Retroperitoneal leiomyomas: a rare tumor of the pelvis.

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Ultrasonographic and magnetic resonance imaging findings of a large asymptomatic retroperitoneal pelvic leiomyoma.
Description: There is a large heterogenous echogenic pelvic mass. Origin:
**Description:** There is a large solid retroperitoneal mass at the left lower abdomen occupying the left pelvis. **Origin:**
Description: There is a large solid retroperitoneal mass at the left lower abdomen occupying the left pelvis. Origin:
Description: There is nonhomogenous enhancement in the mass. Origin:
Description: There is nonhomogenous enhancement in the mass. Origin:
Figure 4

**Description:** There is a hypointense large, nearly homogenous, retroperitoneal mass in the mid and left pelvis. **Origin:**
Description: There is a hypointense large, nearly homogenous, retroperitoneal mass in the mid and left pelvis. Origin:
Description: There is a mass with variable signal intensities. Degree of displacement of the left lateral wall of the urinary bladder. Origin:
Description: There is a mass with variable signal intensities. Origin:
Description: There is a mass with variable signal intensities. 

Origin:
Description: There is a mass with variable signal intensities. Degree of displacement of the uterus.

Origin:
**Description:** There is a mass with variable signal intensities. Degree of displacement of the uterus.

**Origin:**
Figure 8

Description: The mass has variable enhancement. Degree of displacement of the urinary bladder.

Origin:
Description: The mass has variable enhancement. Origin: