

Parasitic Leiomyoma on PET-CT in A Suspected Case of Uterine Sarcoma - Report on Diagnosis and Management

Abstract

This case is a very good example of how a multimodality approach was taken in diagnosis and management of patient with suspected uterine sarcoma, which turned out to be uterine leiomyoma with parasitic leiomyoma mimicking the pararenal deposit. There has been an increased use of fluorodeoxyglucose avid positron emission tomography-computed tomography in pelvic malignancies, especially in the cases where there is suspected extrapelvic spread. It was an interesting finding of parasitic leiomyoma, which can be easily thought to be as deposit/mass in a patient with pelvic malignancy.

Keywords: *Fibroid, parasitic fibroid, tumor deposit, uterine sarcoma*

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Uterine leiomyomas affect 20%–30% of women older than 35 years. Leiomyomas which are extrauterine are rarer, and they present a greater diagnostic challenge:^[1] benign tumors, which originate from smooth muscle cells, usually arise in the genitourinary tract (in the vulva, ovaries, urethra, and urinary bladder) but may arise in nearly any anatomic site. In addition, unusual growth patterns may be seen, including benign metastasizing leiomyoma, disseminated peritoneal leiomyomatosis, intravenous leiomyomatosis, parasitic leiomyoma, and retroperitoneal growth.^[2,3] In the presence of such a pattern, synchronous uterine leiomyoma or previous hysterectomy for removal of a primary uterine tumor may be indicative of the diagnosis. However, some extrauterine leiomyomas may mimic malignancies, and serious diagnostic errors may result.

A 40-year-old lady with large pelvic mass, suspected with uterine sarcoma, presented to the department for initial assessment positron emission tomography-computed tomography (PET-CT) [Figures 1-4]. It showed a bulky uterus measuring ~16.0 cm × 11.3 cm × 17.7 cm, with multiple fluorodeoxyglucose (FDG) avid heterogeneous density (peripherally enhancing centrally hypodense) lesions – likely fibroids. Another well-defined similar density soft tissue

lesion, measuring ~5.6 cm × 4.0 cm, is seen in hepatorenal pouch, causing scalloping of the liver – likely parasitic fibroid. On PET-CT, the uterine mass appeared benign with a parasitic fibroid in hepatorenal region. Hysterectomy with bilateral salpingo-oophorectomy was planned for her, the only problem being the size of the mass occupying whole of the pelvis. Uterine artery embolization was done through right femoral route using PVA foam followed by coiling. After 5 days, hysterectomy with bilateral salpingo-oophorectomy was done. Marker reduction of size of pelvic mass was seen intraoperative. Gross specimen [Figure 5] showed uterus with cervix measuring – 20 cm × 17 cm × 10 cm with multiple fibroids, largest measures 7.5 cm × 6 cm × 4 cm. Right pararenal mass: single globular soft tissue measuring 5.5 cm × 5 cm × 3.5 cm. Microscopic examination [Figures 6-8] was suggestive of leiomyoma uterus with leiomyoma of pararenal mass (IHC – Tumor cells show H-caldesmon positivity). Negative for malignancy.

Parasitic leiomyoma is a rare variant of a common gynecologic entity. It classically is defined as a pedunculated subserosal fibroid that undergoes torsion, detaches from the uterus, and sustains its growth through neovascularization. Occasionally, leiomyomas become adherent to surrounding structures (e.g., the broad

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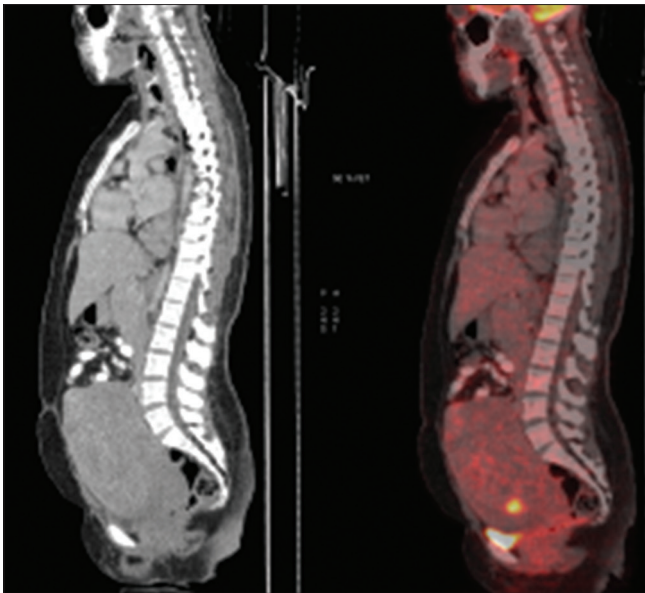


Figure 1: PET-CT sagittal images show large pelvic mass, extending into abdominal region reaching till supra-umbilical level

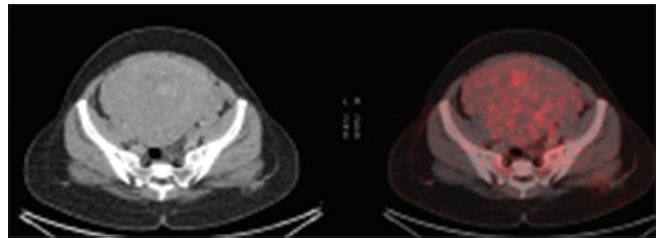


Figure 2: PET-CT axial images also show large mass occupying almost entire pelvic cavity

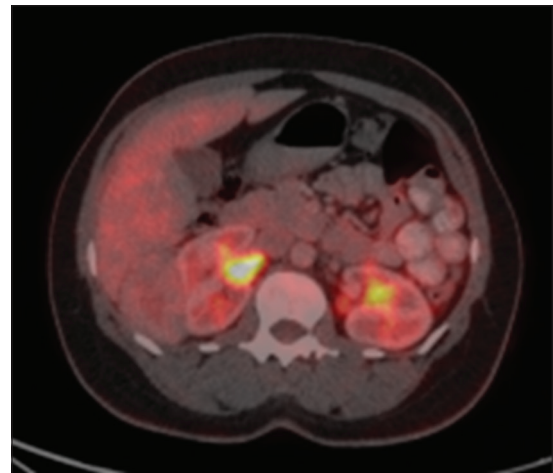


Figure 4: Positron emission tomography-computed tomography axial images showing mass in right hepatorenal region

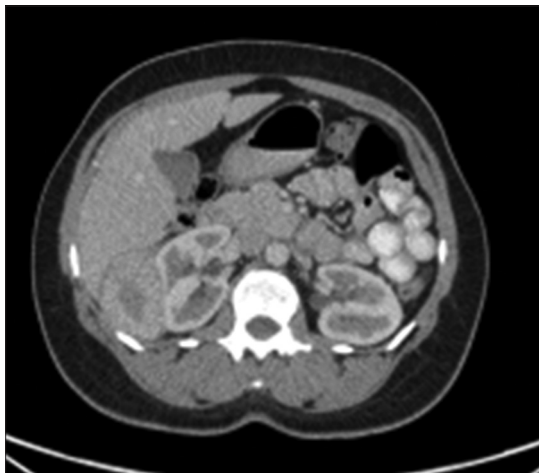


Figure 3: CT axial images showing mass in right hepatorenal region

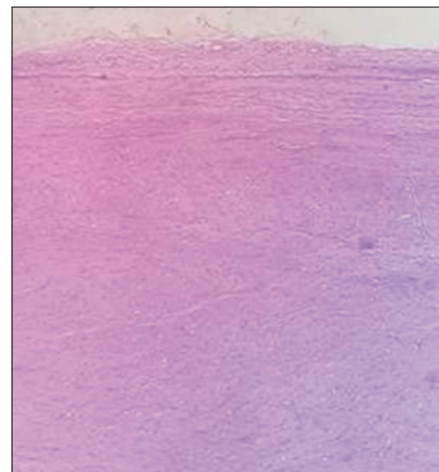


Figure 6: Right hepatorenal mass (HPE x 10) image shows circumscribed cellular spindle cell tumor



Figure 5: Uterus after hysterectomy showing multiple subserosal fibroids

ligament, omentum, or retroperitoneal connective tissue), develop an auxiliary blood supply, and lose their original attachment to the uterus, thus becoming “parasitic.” It also has been suggested that leiomyomas that are adherent to the broad ligament originate from hormonally sensitive smooth muscle elements of that ligament.^[4] Clinically, these lesions may manifest as extrauterine pelvic masses that compress the urethra, bladder neck, or ureter, producing symptoms of varying degrees of urinary outflow

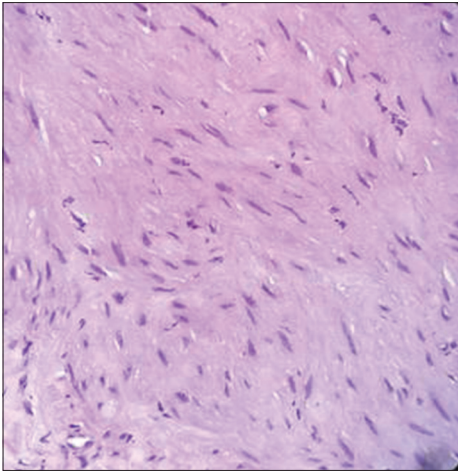


Figure 7: Right hepatorenal mass HPE-x40 image shows fascicles of spindle cells without marked atypia, mitosis or necrosis

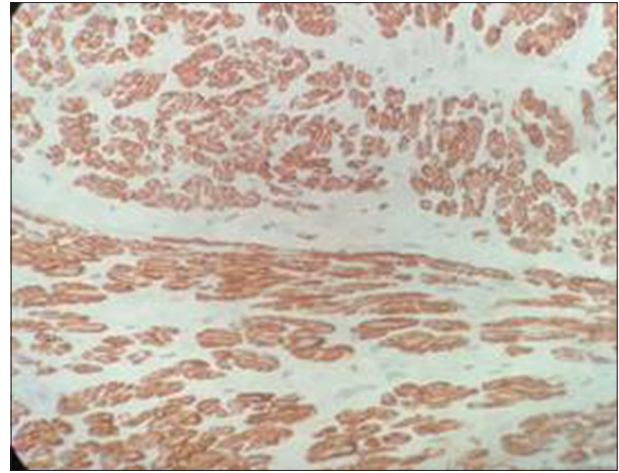


Figure 8: Diffuse H-caldesmon positivity confirms smooth muscle origin

obstruction or secondary hydronephrosis. The differential diagnosis for parasitic leiomyomas includes masses of ovarian origin (both primary neoplasms and metastases), broad ligament cysts, and lymphadenopathy. Transvaginal US may be of great help in diagnosing broad ligament leiomyomas because it allows clear visual separation of the uterus and ovaries from the mass. Magnetic resonance imaging, with its multiplanar imaging capabilities, also may be extremely useful for differentiating broad ligament leiomyomas from masses of ovarian or tubal origin and from broad ligament cysts. There is now a growing body of evidence supporting the use of FDG-PET/CT in gynecological malignancies.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not

be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

References

1. Fasih N, Prasad Shanbhogue AK, Macdonald DB, Fraser-Hill MA, Papadatos D, Kielar AZ, *et al.* Leiomyomas beyond the uterus: Unusual locations, rare manifestations. *Radiographics* 2008;28:1931-48.
2. Szklaruk J, Tamm EP, Choi H, Varavithya V. MR imaging of common and uncommon large pelvic masses. *Radiographics* 2003;23:403-24.
3. Buttram VC Jr., Reiter RC. Uterine leiomyomata: Etiology, symptomatology, and management. *Fertil Steril* 1981;36:433-45.
4. Rader JS, Binette SP, Brandt TD, Sreekanth S, Chhablani A. Ileal hemorrhage caused by a parasitic uterine leiomyoma. *Obstet Gynecol* 1990;76:531-4.