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Case Report

# Retroperitoneal Leiomyoma of the Uterus Mimicking Sarcoma in Perimenopausal Woman: Case Report

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Leiomyomas are very common benign tumors in the uterus and it is rare condition to present the retroperitoneal leiomyoma. The author reported a 48-year-old female patient who presented right pelvic mass with urinary incontinence and lower abdominal discomfort. Based on the preoperative imaging, provisional diagnosis was mesenchymal sarcoma. In the intraoperative findings, huge mass abutting to the uterus was observed in retroperitoneal space beneath the right broad ligament. After the exposure the retroperitoneal space, we encountered the well-demarcated tumor measuring 8 x 6 cm in diameter and this tumor attached the right surface of the uterus with fibrotic tissue. Pathologic findings demonstrated retroperitoneal uterine leiomyoma. **(J Menopausal Med 2014;20:133-137)**

**Key Words:** Leiomyoma, Retroperitoneal neoplasms, Sarcoma, Uterus

Uterine leiomyomas are common benign tumors in female but retroperitoneal leiomyoma of the uterus is rare condition.[1] This condition can lead to make the misdiagnosis or challenge the strategy of treatment of tumor. In general, over three-quarters of retroperitoneal tumors are malignant and the prognosis of retroperitoneal sarcoma is poor with aggressive course and higher local recurrence.[2,3] Therefore, it needs the cautious approach for diagnosis or making decision of treatment of retroperitoneal tumor. Herein, we present a patient with retroperitoneal uterine leiomyoma mimicking retroperitoneal sarcoma preoperatively.

## Case Report

A 48-year-old female patient (gravid 3, para 1) visited the private hospital because of urinary incontinence and lower abdominal discomfort. On the abdominal computed tomography (CT) scan, heterogeneously enhanced mass measuring 8 cm in size nearby the uterus and right ovary was not detected exactly. CT finding suggested the highly possibility of right adnexal tumor. The patient underwent laparoscopic exploration for treatment of this tumor. However, there was no definite abnormality on both adnexae and uterus grossly and the retroperitoneal mass on right side of uterus was detected in the operative field. The patient was referred to our institution for further evaluation and definitive treatment of right retroperitoneal pelvic mass. She had no previous medical illness except surgical history of appendectomy 22 years ago. Abdominal and vaginal examination revealed non-specific findings without palpation of abdominal mass and the laboratory findings are within normal limit including tumor marker.

Abdominal ultrasonography revealed the right adnexal mass with echogenicity and this mass was abutting to uterus. Magnetic resonance imaging (MRI) demonstrated

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8 cm-sized, enhancing mass attached to right adnexa and the uterus. This mass had the low signal intensity on T1-weighted images and heterogeneous, high signal intensity on T2-weighted images (Fig. 1A-1C). Because the previous laparoscopic exploration was negative for abnormality of right ovary, the ovarian tumor was excluded on diagnosis of the patient. Other possible diagnosis on MRI finding was mesenchymal sarcoma because the tumor had similar intensity to the muscle of uterus meaning originated from muscle but it looked like as separate from the uterus. Based on the imaging findings, the patient was diagnosed preoperatively as mesenchymal sarcoma on pelvic cavity and exploratory laparotomy was planned for removal the pelvic mass.

After laparotomy via lower midline incision, the careful examination of pelvic cavity was performed. On the operative fields, the uterus was found to be normal size with smooth contour and there was no abnormal finding on both ovaries and fallopian tubes (Fig. 2A). The retroperitoneal tumor of size 8 × 6 cm was palpated beneath the right broad ligament of uterus and was exposed during the opening of the broad ligament (Fig. 2B). After the exposure the retroperitoneal space, careful dissection of the tumor was performed from adjacent organs including uterus and right iliac vessels and the retroperitoneal tumor was excised completely (Fig. 2C). This tumor was attached to the right

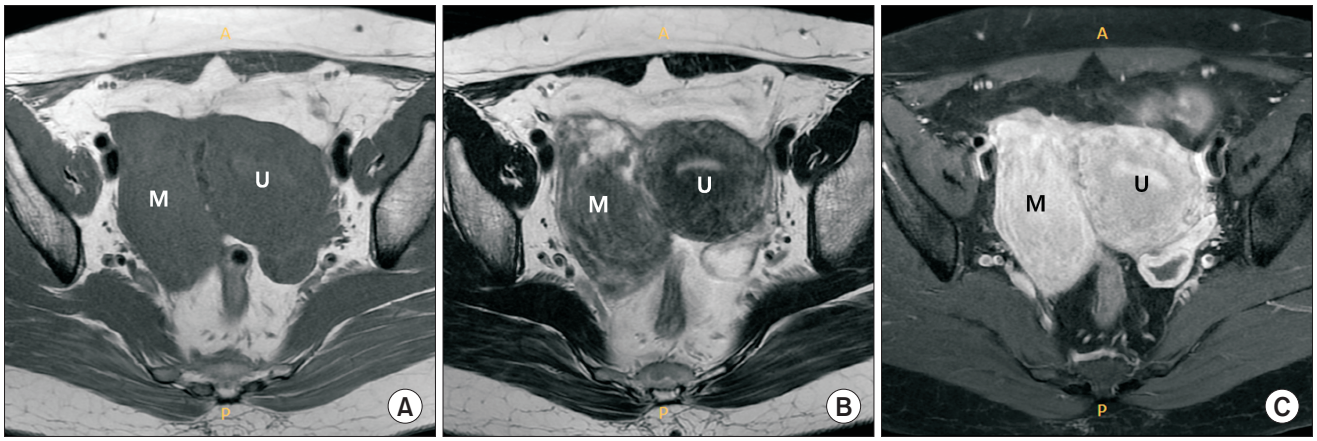


**Fig. 1.** Pelvic magnetic resonance imaging showed 8-cm sized mass separating from uterus. This mass had the low signal intensity on T1-weighted images with enhancement and heterogeneous, high signal intensity on T2-weighted images. (A) Axial, T1-weighted image, (B) axial, T2-weighted image, (C) axial, enhanced T1-weighted image. U: uterus, M: retroperitoneal mass.

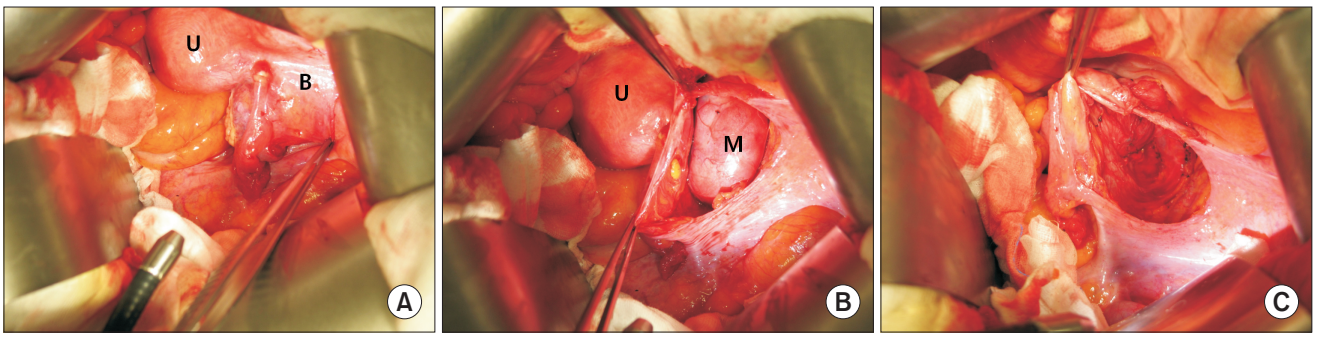


**Fig. 2.** The operative findings. (A) The uterus was normal size with smooth contour and there was no abnormal finding on both ovaries and fallopian tubes grossly. (B) The retroperitoneal tumor of size 8 x 6 cm was located beneath the right broad ligament of uterus. (C) After dissection from the right iliac vessels and the right surface of the uterus, the retroperitoneal tumor was excised completely. U: uterus, B: broad ligament, M: retroperitoneal mass.

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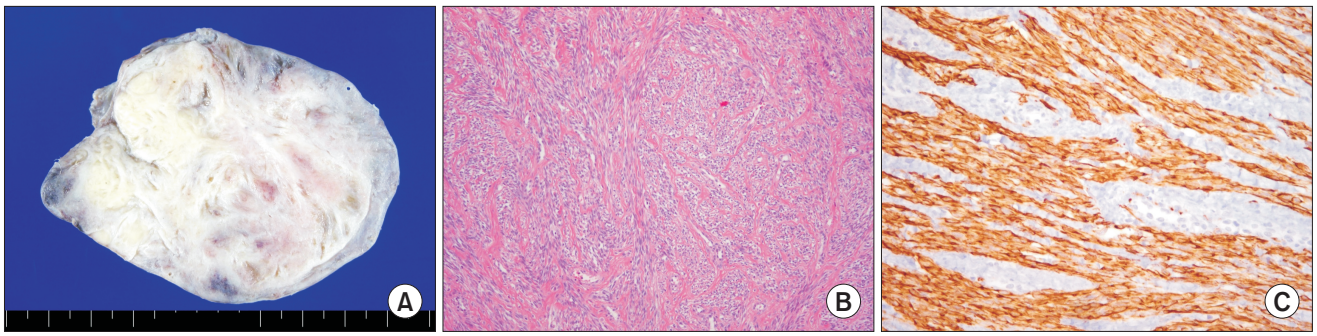


**Fig. 3.** The macroscopic and microscopic findings. (A) Grossly, it is well circumscribed, and the cut surface shows gray-white whirling appearance. (B) The tumor consists of intersecting fascicles of slender-tapered spindle cells (H & E, x100). (C) Immunohistochemical stain for desmin revealed positivity in the tumor cells, consistent with smooth muscle tumor (x200).

surface of uterus without any connection of uterus except the thin fibrous membrane. However, neither invasion nor adhesion to adjacent organs was observed.

On the gross findings, the tumor was well-encapsulated and contained some part of myxoid degeneration (Fig. 3A). Hematoxylin and eosin staining revealed the intersecting fascicles of spindle cells (Fig. 3B). The immunohistochemical staining was positive for actin, desmin, estrogen receptor (ER) & progesterone receptor (PR) and negative for alpha-inhibin and S-100 protein (Fig. 3C). The final histological examination revealed the subserosal uterine leiomyoma measuring 8 × 6 × 3.5 cm in size.

The postoperative course was uneventful and the patient was discharged 6 days after operation. After the operation, the symptoms of urinary incontinence disappeared and she was well with no evidence of recurrent retroperitoneal leiomyoma for 3 years.

## Discussion

Uterine leiomyomas are common benign gynecological neoplasm accounting up to 25% of the reproductive aged women and involve the uterine corpus most commonly but may occur in any site of the uterus.[4]

Retroperitoneal leiomyoma has an unusual growth pattern and the incidence has been reported as very low rate up to 1.2% among primary retroperitoneal tumors.[1]

The several theories of the pathogenesis of extrauterine leiomyoma including retroperitoneal leiomyoma were suggested as followed[5,6]; benign metastasizing leiomyoma, disseminated peritoneal leiomyomatosis, intravenous leiomyomatosis, parasitic leiomyoma, and so on. Of these theories, "parasitic" leiomyoma was first described by Kelly and Cullen and it was defined as completely separation of the pedunculated leiomyoma from uterus with receiving their blood supply from another source.[7] Recently, as the increasing morcellation during myomectomy or hysterectomy, the theory of "iatrogenic" parasitic leiomyoma was suggested as tumor growing by the seeding of part of leiomyoma during morcellation.[8,9]

Retroperitoneal parasitic leiomyoma is very rare condition. There are few reports of "parasitic myoma" and almost of these literatures are just case reports or small series. Kho and Nezhat[8] reported 12 cases of parasitic myoma in a single institution during 8 years. Of 12 cases of parasitic myoma, only 2 cases were found retroperitoneal space in this report.

We thought that our case was consistent with the parasitic leiomyoma. Our case had the separate blood supply neither from uterine artery nor ovarian artery. Because she had no evidence of uterine leiomyoma concurrently or no history of remote hysterectomy or myomectomy for uterine leiomyoma, the possibility of "iatrogenic" parasitic leiomyoma was rejected.

MRI is the most reliable study for evaluating the retroperitoneal leiomyoma. Typical leiomyoma shows the isointense signal on T1-weighted images like as muscle and low signal intensity on T2-weighted images.[7] It may be difficult to differentiate the leiomyoma from leiomyosarcoma on the basis of imaging study such as CT scan or MRI alone.

Some features with extensive central necrosis, invasive growth pattern, and heterogeneous appearance are helpful to differentiate the leiomyosarcoma from leiomyoma.[7]

In present case, however, the retroperitoneal mass had the low signal intensity on T1-weighted images and heterogeneous, high signal intensity on T2-weighted images in MRI. Moreover, there was a separation between the tumor and uterus on MRI and retroperitoneal uterine leiomyoma is rare condition. So it was thought to be very difficult to diagnose this tumor as uterine leiomyoma in retroperitoneal space.

Retroperitoneal tumor is rare condition and the incidence of malignant retroperitoneal tumors is higher than benign tumors.[2,10] Dalen et al.[2] reported that the incidence of malignant retroperitoneal tumors was 80% of all primary non-visceral tumors in the retroperitoneum and sarcomas such as liposarcoma or leiomyosarcoma comprised one-third of retroperitoneal malignant tumors.

The prognosis of retroperitoneal sarcoma is poor because of aggressive course and high local recurrence of the tumor. Erzen et al.[3] reported that the 5-year survival rate with localized retroperitoneal sarcoma was 52% and median survival of these patients was 31 months. And they emphasized the poor prognosis of retroperitoneal sarcoma with higher local recurrence rates up to 45% after 5 years from initial treatment.

In present patient, the provisional diagnosis before operation was retroperitoneal sarcoma. So the approach of operation was selected to the open method for the purpose of radical resection of the tumor. The laparoscopic approach is the feasible method in the treatment of retroperitoneal leiomyoma[11] and the more accurate diagnosis might be possible to consider the laparoscopic approach in our case.

Therefore, it seems to be important to diagnose the retroperitoneal tumor accurately and it can lead to the appropriate treatment including whether the surgeon choose radical resection of sarcoma or minimally invasive operation of benign tumor.

In conclusion, retroperitoneal leiomyoma of the uterus is a rare condition. It needs the effort to consider the possibility of benign leiomyoma in case of the tumor presenting as a retroperitoneal tumor.

And careful examination of radiologic imaging study or intraoperative finding may be helpful to diagnose accurately and to decide the strategy of treatment of retroperitoneal tumor.

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## Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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