Uterine subserosal leiomyomas located in the retroperitoneal space: MRI Evaluation

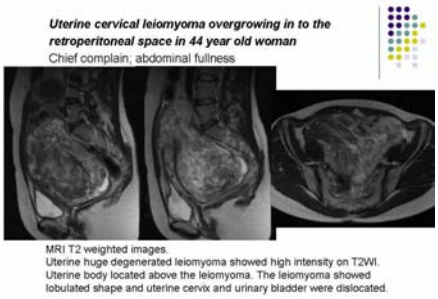
J. Takahama[1], N. Marugami[1], M. Takewa[1], T. Ito[1], S. Kitano[1], T. Taoka[1], K. Kichikawa[1], and S. Hirohashi[2]

[1]Radiology, Nara Medical University, Kashihara, Nara, Japan, [2]Radiology, Osakagyomeikan, Osaka city, Osaka, Japan

Purpose: Uterine subserosal leiomyomas sometimes overgrow into the retroperitoneal space and trouble surgeons with higher risk of hemorrhage and ureteral injury during surgery. In this study, we aimed to clarify the MR features of uterine leiomyomas located in the retroperitoneal space.

Materials and Methods: Ten uterine subserosal leiomyomas located in the retroperitoneal space were collected. Six leiomyomas arose from the uterine cervix and the other four from the uterine body. MR images were obtained by SE sequence T1 weighted images and FSE sequence T2 weighted images (on Siemens Magnetom Sonata 1.5T or Toshiba Signa 1.5T). All cases underwent operation within one month after the MR examination. MR images of the leiomyomas were retrospectively evaluated as follows: the size (maximal diameter), signal intensity on T2 weighted images, the shape (round or lobulated), dislocation of the urinary bladder or rectum due to pressure from the leiomyoma, and flow void between the leiomyoma and pelvic wall.

Results: The size ranged from 3-20cm and the mean diameter was 12.2cm. Six cases showed high intensity on T2 weighted images and 4 showed low intensity. Five leiomyomas showed a lobulated shape and 6 a round shape. Six leiomyomas pressed on the urinary bladder or rectum dislocating it to the lateral side in the pelvic cavity. In five cases a flow void between the leiomyoma and pelvic wall was visible.



MRI T2 weighted images.
Uterine huge degenerated leiomyoma showed high intensity on T2WI.
Uterine body located above the leiomyoma. The leiomyoma showed lobulated shape and uterine cervix and urinary bladder were dislocated.

Results

Case	origin	Size (Max diameter(cm))	T2WI	flow void	lobulation	Pressing pelvic organ
1	cervix	12	high	+	+	+
2	cervix	14	high	+	+	+
3	cervix	3	low	–	–	–
4	cervix	20	high	–	+	+
5	cervix	13	high	+	–	+
6	cervix	10	high	–	–	–
7	body	7	low	+	–	–
8	body	16	low	+	–	–
9	body	13	low	+	–	–
10	body	14	high	–	+	+

Discussion: Uterine leiomyomas overgrowing into the retroperitoneal space tend to be large and show high signal intensity on T2 weighted images meaning degeneration. The retroperitoneal space is narrower than the intra-abdominal cavity, and so so leiomyomas squeezed into the retroperitoneal cavity showed lobulated shape caused by some bands. Leiomyomas in the retroperitoneal space were also considered to be supplied from pelvic arteries directly. These signs are thought to be characteristic of these leiomyomas. Dislocation of the urinary bladder and rectum was reported to be a characteristic feature of retroperitoneal tumors.

Conclusion: Uterine subserosal leiomyomas located in the retroperitoneal space tend to be large, degenerated and appeared to have characteristic features such as lobulated shape or flow void between pelvic wall, and to press on the retroperitoneal organs.