A case report of a pedunculated uterine leiomyosarcoma

N. Ohara, *M.D., Ph.D.*; **K. Teramoto,** *M.D., Ph.D.*
Department of Obstetrics and Gynecology, Konan Hospital, Kobe (Japan)

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Introduction

Magnetic resonance imaging (MRI) is a useful tool for the evaluation of pelvic diseases in gynecological fields. However, there have been few reports on MRI for the detection of a uterine leiomyosarcoma. We describe an unusual case of a pedunculated uterine leiomyosarcoma which was diagnosed as an ovarian cancer preoperatively on MRI.

Case Report

A 50-year-old female was referred to us from the department of internal medicine in our hospital because of a large pelvic mass. She had lower abdominal fullness of one month's duration. Pelvic examination revealed a large pelvic mass, which was elastic, soft and nontender, extending to the level of the umbilicus. The cytological examinations of the portio, endocervix and endometrium were all negative for cancer cells. Serum tumor markers were under the cuf-off values: 0.8 ng/ml in CEA, 6.2 U/ml in CA19-9, 32.4 U/ml in CA125, 3.2 ng/ml in AFP and 34 U/ml in SLX.

On MRI, the size of the tumor was approximately 12x10x16 cm in dimension. On a sagittal T_1-weighted image, the tumor displayed a heterogeneous isointensive to hypointensive signal compared with the myometrium (Figure 1). In contrast, on a sagittal T_2-weighted image, the tumor showed a heterogeneous isointensive to hyperintensive signal compared with the myometrium (Figure 2). The content of the cystic lesion was considered not to be hemorrhage but a water-like substance. No lymphadenopathy was identified but a small amount of ascites was found in the pelvic cavity. An ovarian cancer was most suspected from the findings on MRI. A CT scan of the lung and the upper abdomen did not show any abnormal findings.

The patient subsequently underwent exploratory laparatomy in the diagnosis of an ovarian malignant tumor. At laparatomy, the tumor was cystic and the size of a newborn's head and several atypical vessels were running along the tumor surface. A small amount of water-like ascites and yellowish mucinous substance was retained in the pelvic cavity. The tumor was tightly adhesive to the mesentery. The bilateral ovaries and fallopian tubes were unremarkable. The uterus was slightly enlarged and a peduncle communicating with the tumor was located near the uterine fundus. Cystic degeneration or myxomatous change of a pedunculated uterine leiomyoma was suspected. The cytological examination of ascites was negative for malignant cells and the frozen examination of the tumor revealed the uterine leiomyoma. In spite of these results, we could not entirely deny the possibility of malignant change. Therefore, a total hysterectomy and bilateral salpingo-oophorectomy and resection of the adhesive site on the mesentery were performed.

Macroscopically, many different sized cysts containing mucinous substances and several hemorrhagic sites were visible on the cut surface of the tumor (Figure 3). Histologic evaluation revealed a uterine leiomyosarcoma with high cellularity (Figure 4). The tumor also had cystic changes, edematous changes and hyaline degeneration. However, the portio, endocervix, endometrium and bilateral ovaries and tubes and the adhesive site on the mesentery were not involved with sarcoma. The patient had an uncomplicated postoperative course.

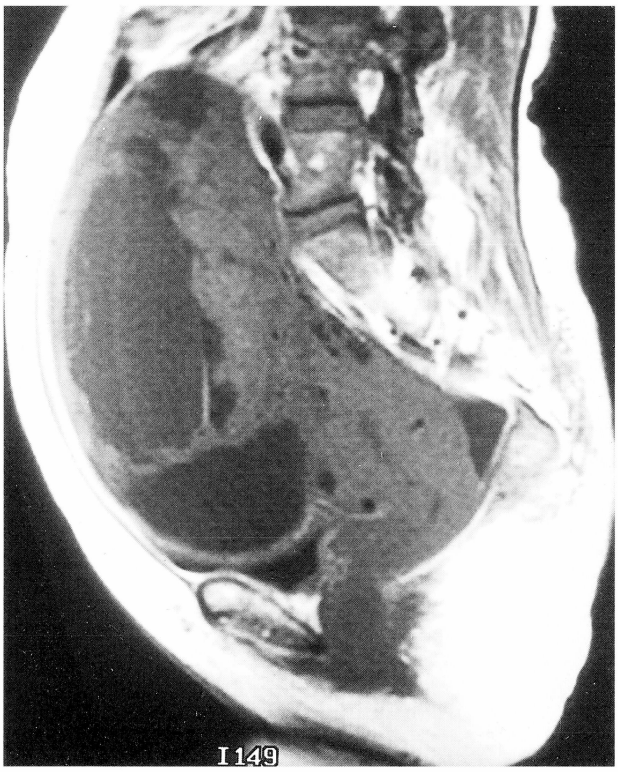

Figure 1. — Sagittal MRI findings of a pedunculated leiomyosarcoma on T_1-weighted images.

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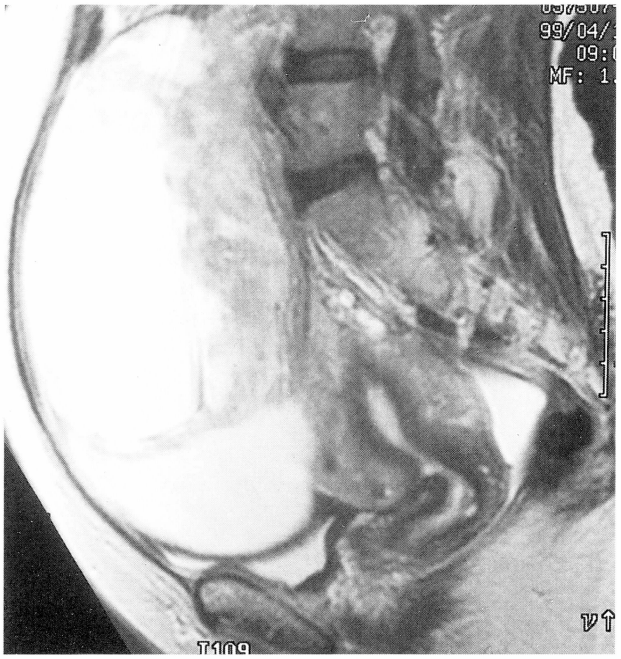

Figure 2. — Sagittal MRI findings of a pedunculated leiomyosarcoma on T_2-weighted images.

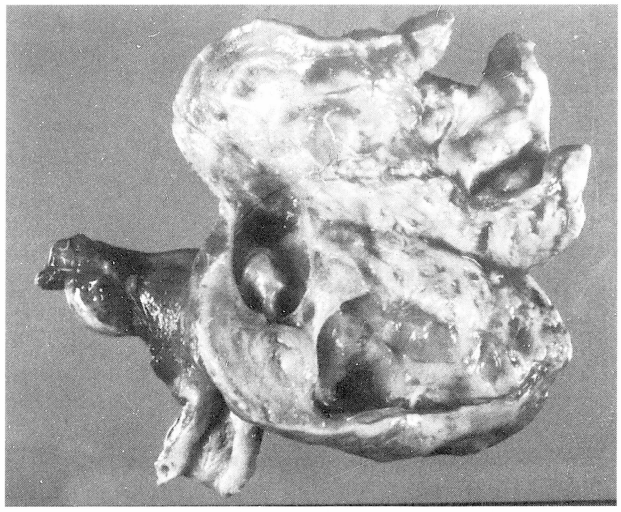

Figure 3. — Macroscopic aspect of a pedunculated uterine leiomyosarcoma.

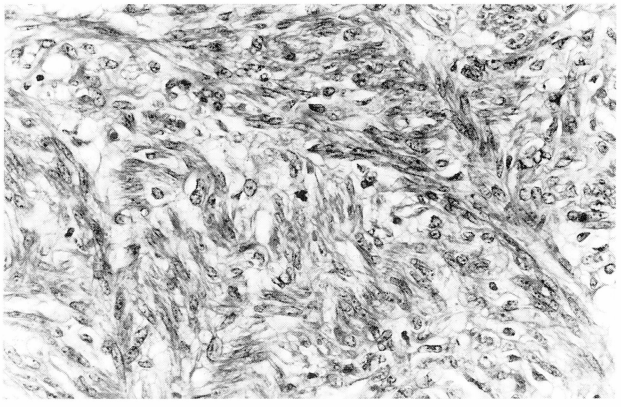

Figure 4. — Histological finding of a uterine leiomyosarcoma.

Discussion

Uterine leiomyosarcomas are relatively rare neoplasmas, accounting for only three percent of all uterine malignancies.

In general uterine leiomyosarcomas arise in the uterine body. However, in this case a leiomyosarcoma is considered to have originated either from a pre-existing pedunculated leiomyoma or de novo from normal uterine musculature.

Moreover, it has recently been postulated that a uterine leiomyosarcoma may also arise in muscle and connective tissue of uterine blood vessels [1].

As a differential diagnosis from a uterine leiomyosarcoma on MRI, a uterine leiomyoma with degeneration such as hyaline, cystic, myxomatous and mucinous changes should be the first candidate. However, the ability of MRI to distinguish between various types of benign degeneration in a uterine leiomyoma and the malignant transformation of a leiomyoma has not yet been proven. Two case reports on MRI of a uterine leiomyosarcoma have appeared in the literature but these reports did not identify specific imaging features [1, 2]. In both cases, a tumor was described as having heterogeneous areas consistent with debris and hemorrhage within the lesion. In addition, Pattani *et al.* [3] reported that the uterine leiomyosarcoma displayed a heterogeneous signal intensity on the T_2-weighted sequences which was interpreted as atypical degeneration of a leiomyosarcoma. In our case the MRI finding on the T_1-weighted images of tumor displayed a heterogeneous iso- to hypointensive signal and on the T_2-weighted images it showed a heterogeneous iso- to hyperintensive signal compared with the myometrium. The tumor was located outside the uterus and the direct connection between a leiomyosarcoma and the uterus was unclear on MRI. Since the tumor was seen to be apart from the uterus and had several cystic lesions, a malignant ovarian neoplasma was most suspected preoperatively.

Thus, MRI features did not always permit a correct diagnosis of the uterine leiomyosarcoma to be made.

Additional experiences will be necessary to determine whether the features on MRI can allow a confident preoperative diagnosis of a uterine leiomyosarcoma.

References

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Address reprint requests to:
NORIYUKI OHARA
Department of Obstetrics and Gynecology
Konan Hospital
5-16-1 Chome Kamokogahara Higashinada
Ku Kobe City
658-0064 Kobe (Japan)