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One case of intrauterine early pregnancy with low grade endometrial stromal sarcoma

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Summary

Endometrial stromal sarcoma (ESS) is derived from endometrial stromal cells of the tumor. In 2014,the World Health Organization (WHO) currently divides these tumors into four different subtypes based on clinical and pathologic features: endometrial stromal nodule (ESN), low-grade endometrial stromal sarcoma (LG-ESS), high-grade endometrial stromal sarcoma (HG-ESS), and undifferentiated uterine sarcoma (UUS).Pregnancy with endometrial stromal sarcoma is extremely rare. Here the authors report an example of intrauterine early pregnancy with endometrial stromal sarcoma cases, due to early pregnancy vaginal bleeding, rapid increase in abdominal mass, and other symptoms, line fibroid surgery was diagnosed.

Key words: Endometrial stromal sarcoma; Low grade; Pregnancy.

Introduction

Endometrial stromal sarcoma (ESS) is a rare mesenchymal tumor, comprising approximately 0.2% of uterine malignancies and up to 15% of uterine sarcomas [1]. In 2014,the World Health Organization (WHO) currently divides these tumors into four different subtypes based on clinical and pathologic features: endometrial stromal nodule (ESN), low-grade endometrial stromal sarcoma (LG-ESS), high-grade endometrial stromal sarcoma (HG-ESS), and undifferentiated uterine sarcoma(UUS) [2].

LG-ESS is generally a low-grade malignant neoplasm, so the prognosis is superior to other uterine sarcomas [3]. The clinical symptoms do not occur at an early time. With the development of the disease the following symptoms may appear: irregular vaginal bleeding, abdominal pain, abdominal mass, symptoms of oppression, and other symptoms. Other late patients may present with body weight loss, anemia, fever or the emergence of lung, brain metastases, and other symptoms. The diagnosis is mainly based on histopathological examination. As there is no reliable preoperative imaging diagnosis, they are often preoperatively misdiagnosed as uterine fibroids and only myoma removal of the situation. Postoperative staging is done using the pTNM 2 and FIGO classification systems (Table 1) [4]. With LG-ESS, surgery-based combination therapy such as surgery combined with radiotherapy or chemotherapy is still preferred. Surgical resection is appropriate for patients with early-stage (I or II) disease and those with resectable, advanced-stage (III or IV) tumors. Hormone therapy may be appropriate in treating advanced and recurrent disease [5]. For young patients it may be considered to retain the ovaries, which is still in the experimental stage [4]. Metastatic lesions, especially pulmonary ones, seem to benefit from surgical removal, followed by progestin therapy. Hormonal therapy should be maintained for an indefinite period. On account of the long period existing between primary tumor and recurrent disease, a long-term follow-up is always recommended after the primary treatment [6].

Additional favorable results have been reported in patients treated with gonadotropin-releasing hormone analogs and aromatase inhibitors [7, 8]. ESS with pregnancy status is extremely rare. Here the authors report an example of intrauterine early pregnancy with ESS cases, and due to early pregnancy, vaginal bleeding, rapid increase in abdominal mass, and other symptoms, line fibroid surgery was prescribed.

Case Report

The patient was a female, 28-years-old. The patient was hospitalized in January 11, 2016 due to amenorrhea of 58 days and six-day irregular vaginal bleeding. A uterine fibroid was diagnosed two years prior, the size of which was around 1 cm and did not enlarge according to the regular follow-up of B-ultrasound. Last menstrual period (LMP) was as the former check up. Slight spontaneous vaginal bleeding occurred on the 52nd day of amenorrhea. Emergency examination was positive for pregnancy. B-ultrasonography showing live intrauterine pregnancy with a 6-mm embryo and visible heart beat; 34×27 mm of hypoechoic tissue was observed next to the gestational sac. Uterine fibroids were not excluded. Dydrogesterone (1# q8h po) was prescribed for treating miscarriage as emergency treatment. January 9, 2016, the outpatient review of blood B-hCG and progesterone were both

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Table 1. — *FIGO/TNM staging of uterine leiomyosarcomas and endometrial stromal sarcomas.*

FIGO/TNM Stage	Definition	
I/T1		Tumor limited to the uterus
	IA/T1a	≤ 5 cm at its largest diameter
	IB/T1b	> 5 cm at its largest diameter
II/T2		Tumor extends beyond the uterus to the pelvis
	IIA/T2a	Involvement of the adnexa of the uterus (unilateral or bilateral)
	IIB/T2b	Tumor spreads to extrauterine pelvic tissue excluding the adnexa
III/T3		Tumor has infiltrated abdominal tissues
N1	IIIA/T3a	One site
	IIIB/T3b	More than one site
	IIIC	Metastasis to the pelvic and/or para-aortic lymph nodes
IVT4	IVA/T4	Tumor has infiltrated the bladder and/or rectum
	IVB	Distant metastasis

** Synchronous tumors of the uterine body and the ovary/pelvis accompanied by endometriosis of the ovary/pelvis should be classified as independent primary tumors.*

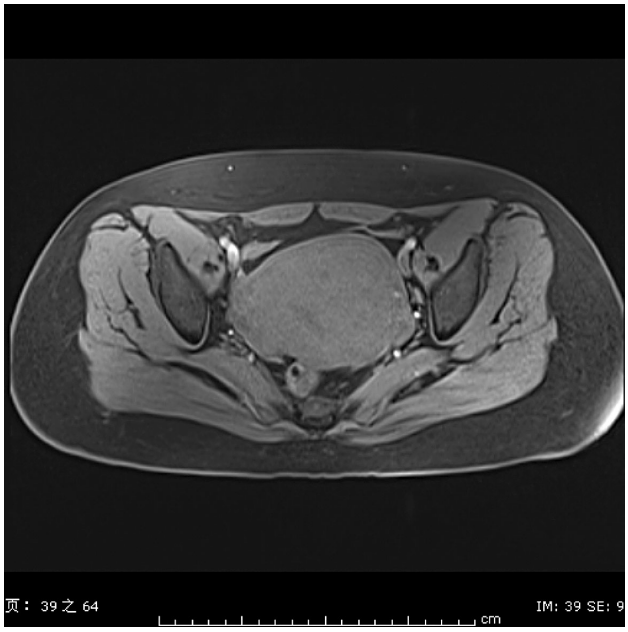


Figure 1. — T1WI fat suppression.

significantly lower than before, B-ultrasonography showed that the early pregnancy might be accompanied with a uterine fluid. The gestational sac is at the mid-right of the uterine cavity, had a size of about 23×13×23 mm. The embryo was not observed inside the gestational sac, therefore it was confirmed as a blind egg of 7 mm without echogenicity. The examination showed uterine enlargement and uterine fibroids with cystic degeneration. A 69×58×57 mm hypoechoic area was observed on the lower anterior wall of the uterus. On January 13, 2016, the patient had a spontaneous discharge and the pathological test showed interstitial decidual changes of secretory endometrial. Admission test tumor indicators included: blood CA153: 15.6 U/ml, AFP, CEA, CA125, and CA199 were normal. MRI showed uterine cavity anterior wall mucosal thickening, uterine enlargement, and general myometrial thickening. An irregular T1WI signal (about 90×70 mm) and other slightly higher signals were observed on the left anterior of the myometrium (Figure 1). In the mixed T2WI, a high signal was observed. The proliferation was also mixed with high signal (Figure 2). Enhanced lesions at high signal intensity weakened and intravenous phase gradually strengthened.The uterine cavity was increased, the small patchy and slightly higher T2WI signals were observed inside the uterine cavity (Figure 3). The DWI image showed a high signal (Figure 4) with a lower ADC value (Figure 5). No obvious abnormal signals were observed on the bilateral annex. The rectal wall showed no significant thickening and abnormal enhancement. No obvious effusion was observed in the uterine-rectal gap. Bilateral iliac blood vessels showed no obvious

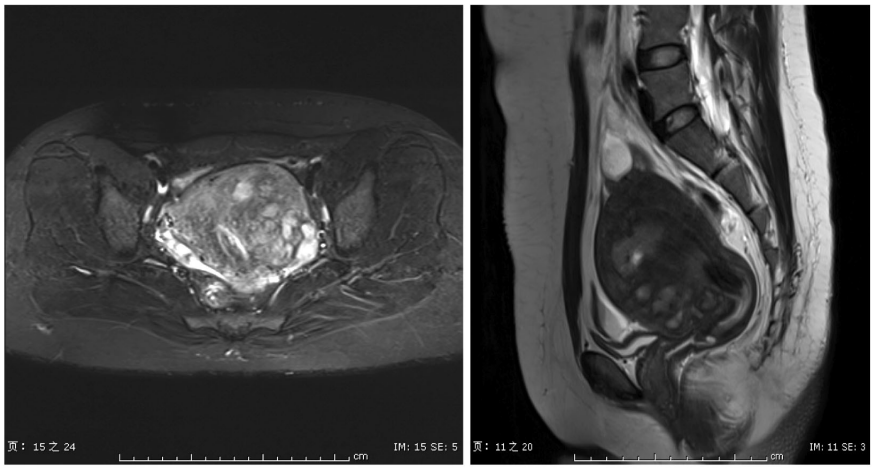
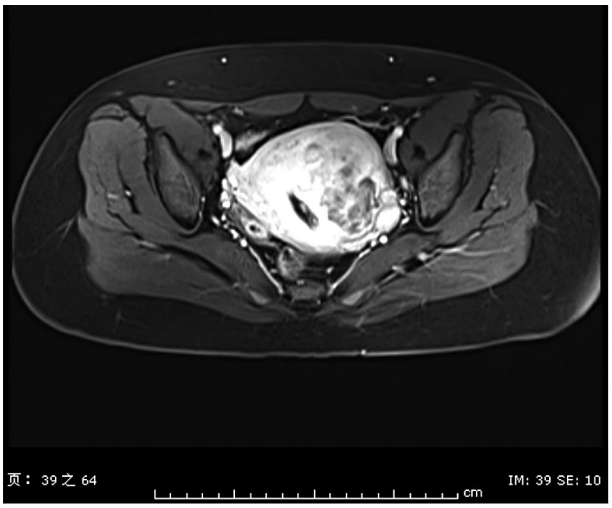


Figure 2. — Left: T2WI at suppression; Right: sagittal T2WI.



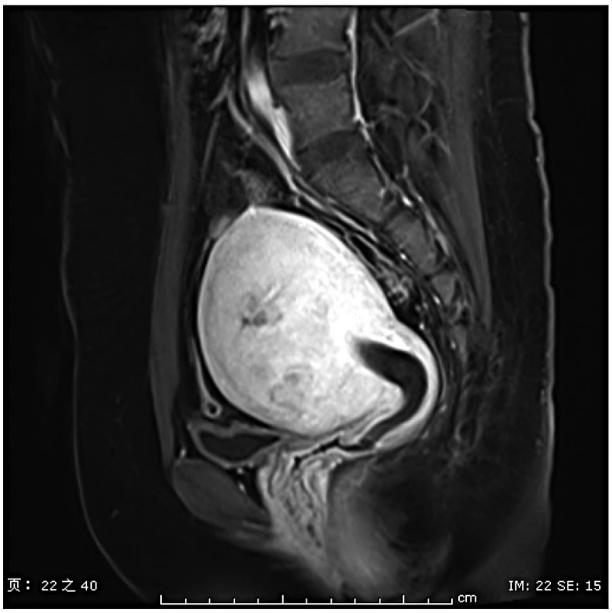


Figure 3. — Left: T1WI lipid enhanced; Right: sagittal T1WI lipid enhanced

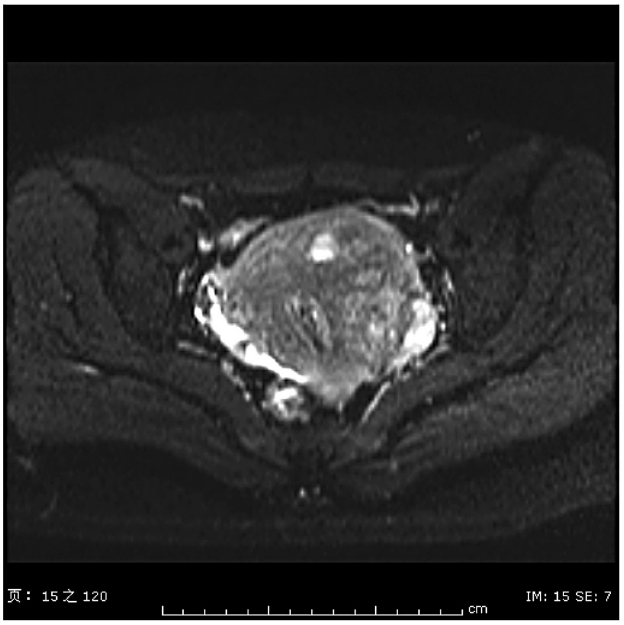


Figure 4. — DWI.

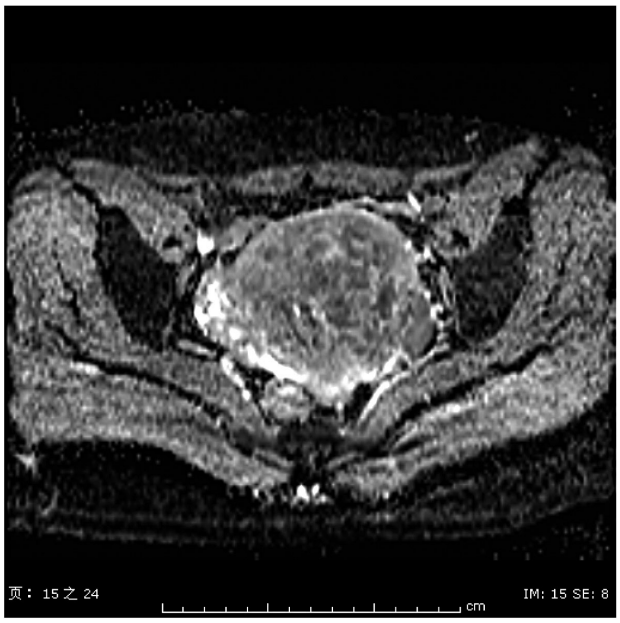


Figure 5. — ADC.

lymph nodes.

On January 18, 2016, abdominal uterine tumor stripping surgery was performed under general anesthesia. Intraoperative observation included an increased anterior uterus showing regular morphology and it had a size of a two-month pregnancy. The bilateral ovarian fallopian tube appeared normal. The tumor showed bead-like changes and tangled into a group. The tumor boundaries could not be seen clearly.

Intraoperative frozen pathology confirmed uterine spindle cell tumor with abundant cells that were actively growing. The growth pattern of local focus was infiltrating. Postoperative pathology confirmed LG-ESS (Figures 6 and 7).

Immunohistochemistry included S-100-, P63-, Ki-67 1% +, CD117-, NSE- / +, Syn- / +, inhibin-α-, CD99-, CK-, EMA (-), CD34 +, HMB45-, vimentin +, CD10 +, SMA vascular +, desmin, caldesmon-, ER +, PR +, and 34βE12-. Postoperative diagnosis was LG-ESS with spontaneous abortion.

On July 6, 2016, laparoscopic total ovarian bilateral ovarian salpingectomy was performed in another hospital. Postoperative pathological diagnosis included the entire uterus with LG-ESS, diffuse infiltration of the uterine deep muscular layer of the serosal surface to the deep cervical fibrous myofilaments to the lateral wall, chronic cervicitis, no tumor involvement of the bilateral tubes, inflammation and serous cysts of the right ovary, and inflammation and corpus luteum of the left ovary. Immunohistochemistry included SMA (-), Des (-), CD10 (+), caldesmon (-), ER +, PR +, Ki-67 (10% +), CD31, and D240 (vasculoma). Oral administration of medroxyprogesterone acetate was prescribed after the operation. During the one-year follow up, no signs of recurrence was observed so far.

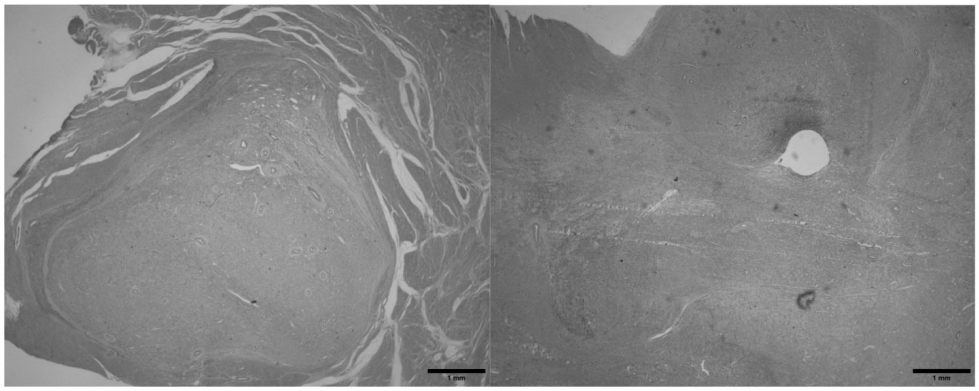


Figure 6. — Clear tumor islands with sharp edges and extensive infiltration of the muscle layer under the low magnification microscopy (HE ×20).

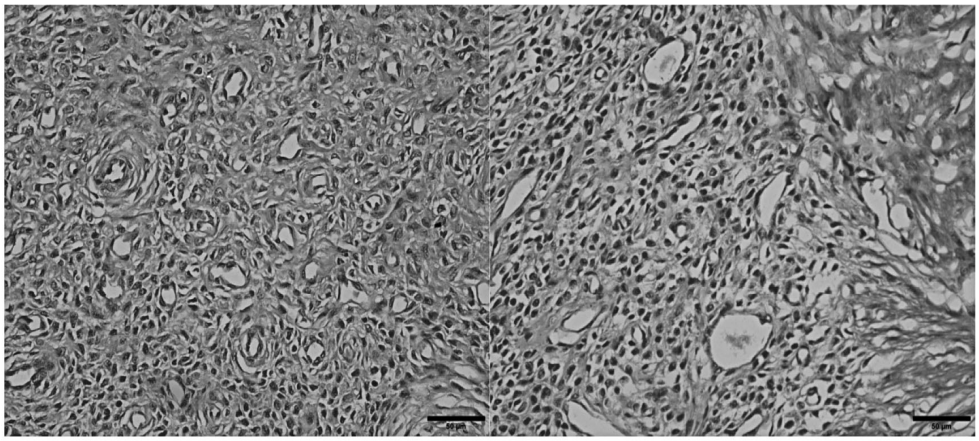


Figure 7. — Under high magnification, tumor tissue concentric around the spiral artery arrangement can be seen; tumor cells are spindle-shaped, of the same size, with less cytoplasm, and mitotic phase is rare. Peripheral tumor cells invade the muscularis (HE × 400).

Discussion

Pregnancy with ESS is very rare. including domestic reports of ESS with full-term delivery in two cases in China [9,10].

Early symptoms of ESS a are not obvious, with the progression of the disease, and the following symptoms may occur: irregular vaginal bleeding, abdominal pain, frequent and urgent urination, defecation difficulties, and other symptoms of oppression. In the late period, cachexia develops, cervical sarcoma or tumor prolapses from the uterus, and a large number of odorous secretions occur in the vagina. The tumor increases rapidly after pregnancy, and develop a series of typical clinical symptoms. In recent years, the incidence of malignant tumors continues to increase and the patients' age tend to become younger. Changes in hormone levels after pregnancy accelerate tumor growth and malignant transformation. Pregnant women with suspected uterine fibroids need to be vigilant of the uterine sarcoma when the irregular vaginal bleeding occurs in early pregnancy and a rapid increase of fibroids after pregnancy occur. Medical curettage of ESS has a certain value, but it has some limitations. The imaging examination must be taken into consideration. Pathological examination is still the golden standard of the diagnosis. Once the definite diagnosis is made, the therapeutic plan should be made according to the staging. Because LG-ESS can relapse after years of early diagnosis, long-term follow-up is recommended .

In summary, the present case of intrauterine early pregnancy with LG-ESS is extremely rare and includes typical symptoms. For similar patients, preoperative full preparation is made in advance to communicate the relevant departments, so that a multi-disciplinary collaboration can be undertaken, thus providing useful information to better inform and optimize treatment strategies.

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