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Original Article

Endometrial stromal sarcoma with endometrioid adenocarcinoma of the uterus: a case report

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Abstract: Endometrial stromal sarcoma (ESS) is a rare malignant neoplasm of the uterus. We report the first case of undifferentiated ESS (UES) coexistent with grade 1 endometrioid adenocarcinoma in a 73-year-old female who presented with irregular vaginal bleeding for 4 days after menopause 20 years. Imaging examination including Magnetic Resonance Imaging (MRI) demonstrated multi-node reflection in uterine cavity without metastatic lesions, and the endometrium essentially normal. Grossly, a grey-red breakable polypoid tumor of 4.5 × 3.0 ×2.0 cm was recognized in the posterior uterine wall with surrounding slight rough endometrium. Microscopically, the tumor was composed of a larger component of undifferentiated stromal sarcoma that was distinct from a smaller endometrioid adenocarcinoma. The separate components of the tumor could be supported in immunohistochemical studies. There was no sign of recurrence for postoperative 6 months.

Keywords: Uterus, stromal tumor, immunohistochemistry

Introduction

Traditionally, ESS were classified into 2 categories (according to the mitotic index), low-grade and high-grade ESS, but in 2003, the World Health Organization (WHO) changed the definition and the diagnostic criteria, only low-grade ESS (LGESS) is currently considered as ESS, whereas high-grade ESS is known as undifferentiated endometrial sarcoma [1-3]. We report a rare case involving a patient with undifferentiated endometrial stromal sarcoma (mitotic activity greater than 10 mitotic figures/10 HPF) in the International Federation of Gynecology and Obstetrics (FIGO) stage IB and concomitant grade 1 endometrioid adenocarcinoma in the FIGO stage IA. This is extremely rare report to our knowledge that describes a synchronous endometrial stromal sarcoma and endometrioid adenocarcinoma of the uterus.

Due to a significantly improved prognosis of these tumors suggest that they should be distinguished from malignant mullerian mixed tumors. The patient underwent a complete hysterectomy and bilateral adnexectomy, and there is no sign of recurrence after 6 months of follow-up.

Case report

The patient was an old woman of 73 years who presented with irregular vaginal bleeding for 4 days after menopause 20 years. Physical examination revealed an enlarged size of the uterus of pregnant in 3 months with elevated serum markers: cancer antigen 125 (CA 125)-155.50 U/mL (normal value: < 35.00 U/mL) and normal ranges serum marks: CA 19.9-26.35 U/mL (normal value: < 39.00 U/mL), CA 15-3 -8.08 U/mL (normal value: < 25.00 U/mL), CA 72-4-4.16 U/mL IU/mL (normal value: < 8.20 U/mL) and CEA-2.98 ng/mL (normal value: < 5.00 ng/mL). A type-B ultrasonic examination showed a strong echo (4.9 × 4.0 cm) closely relative to posterior uterine wall and the endometrium had a thickness of 4 millimeter and the bilateral annex area were essentially normal. On MRI, the lesions displayed multiple node mass formation (5.2 × 2.3 × 1.4 cm) in uterine cavity with hypo-or iso-intensity on T1W images and hyperintensity on T2W images, which were slightly enhanced after contrast administration. The endometrium and the bilateral annex area didn't demonstrate abnormal signal intensity. Upon surgical exploration, an enlarged uterus (pregnant uterus of 3 months gestation in size)

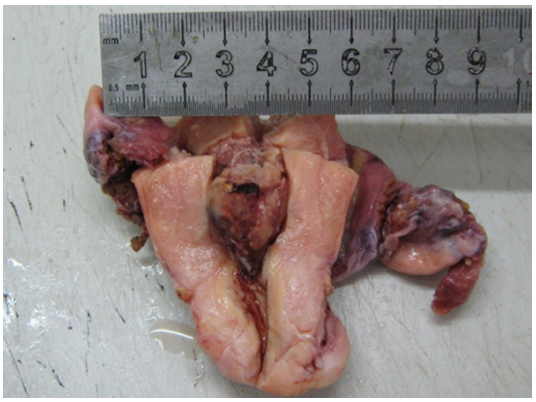

Figure 1. Gross findings. A grey-red breakable polypoid tumor of 4.5 × 3.0 × 2.0 cm was recognized in the posterior uterine wall.

and no celiac effusion was found in the pelvic cavity and adhesion between the posterior wall of the uterus, omentum majus and intestinal canal was observed.

Grossly, a grey-red breakable polypoid tumor of 4.5 × 3.0 × 2.0 cm was recognized in the posterior uterine wall with surrounding slight rough endometrium. The adnexal masses did not be discovered (**Figure 1**). Microscopically, the tumor composed of a larger component of high-grade stromal sarcoma with hemorrhage and necrosis that was connected to the endometrium and distinct from a smaller grade 1 endometrioid adenocarcinoma. The sarcoma component infiltrated adjacent myometrium and had uneven distribution of thin-walled vascular spaces, pronounced cytologic atypia with undifferentiated bizarre or giant sarcoma cells and mitotic activity greater than 10 mitotic figures/10 HPF; however focal cell may still resemble endometrial stromal cells (**Figure 2A**-**C**). The surrounding endometrium presented endometrioid glandular structures restricted to home position with slight pleomorphism, hyperchromatic nuclei and an increased nucleus/cytoplasm ratio which was dignosed as grade 1 endometrioid adenocarcinoma (**Figure 3**).

Immunohistochemically, the ESS cells were positive for vimentin, CD10 (**Figure 4A**), p16INK4 (**Figure 4B**) and CD34 (**Figure 4C**). The index of cell proliferation (Ki67) was 70%. The tumor cells were negative for estrogen receptor (ER), progesterone receptor (PR), cytokeratin (PAN), inhibin-α, cyclin D1 and actin.

According to the classification of FIGO, the ESS was in FIGO stage IB, endometrioid adenocarcinoma in stage IA. The patient is treated by PT chemotherapy: oxaliplatin (70 mg/m^2, 133 mg) + duoxitasai (75 g/m^2, 142 mg) after operation. Now, the patient terminated therapy when was performed in 2 courses chemotherapy over a 4-week period and there is no evidence of recurrence after 6 months of follow-up.

Discussion

Endometrial stromal sarcoma was rare uterine mesenchymal neoplasms that had debated diagnosis and was difficult for preoperative diagnosis. Generally, ESS occurs in postmenopausal women who present with abnormal bleeding or pelvic pain [4]. According to the latest WHO Classification, ESS can be classified into low-grade ESS and undifferentiated endometrial sarcoma. LGESS are low malignant tumors with mitotic rate typical lower than 10/10 HPF.LGESS and composed of resembling of endometrial stromal cell with numerous small plexiform arterioles and limitation of the endometrium. In contrast, UES are malignant and the mitotic rate is usually greater than 10/10 HPF. It often exhibits myometrial invasion, uneven distribution of thin-walled vascular spaces, hemorrhage and necrosis, as well as marked nuclear pleomorphism with undifferentiated bizarre or giant sarcoma cells [5].

The case we reported presented UES. Additionally, endometrioid glandular was dignosed as grade 1 endometrioid adenocarcinoma which showed the structures restricted to home position with slight pleomorphism, hyperchromatic nuclei and an increased nucleus/cytoplasm ratio. For that reason, the case was dignosed as UES and concomitant grade 1 endometrioid adenocarcinoma.

CD10 is a well-known positive diagnostic marker of ESS, but there are exceptional cases that lack diffuse CD10 expression, especially in high-grade ESS [6-8].

Lately, p16INK4 and cyclin D1 were considered to use as extended markers. The case was positive for vimentin and p16INK4 and focal positive for CD10. The index of cell proliferation (Ki67) was 70%. There were negative for ER, PR, Cytokeratin (PAN), Inhibin-α, cyclin D1 and Actin.

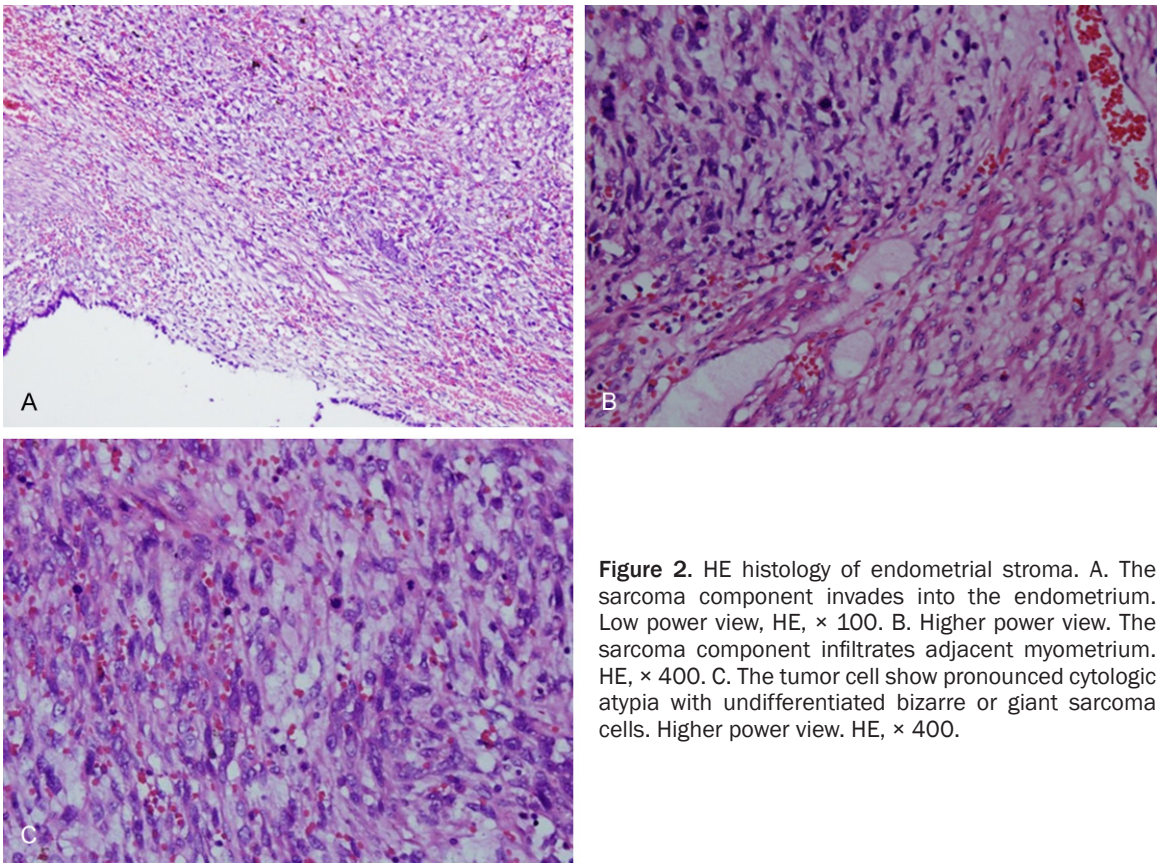

Figure 2. HE histology of endometrial stroma. A. The sarcoma component invades into the endometrium. Low power view, HE, × 100. B. Higher power view. The sarcoma component infiltrates adjacent myometrium. HE, × 400. C. The tumor cell show pronounced cytologic atypia with undifferentiated bizarre or giant sarcoma cells. Higher power view. HE, × 400.

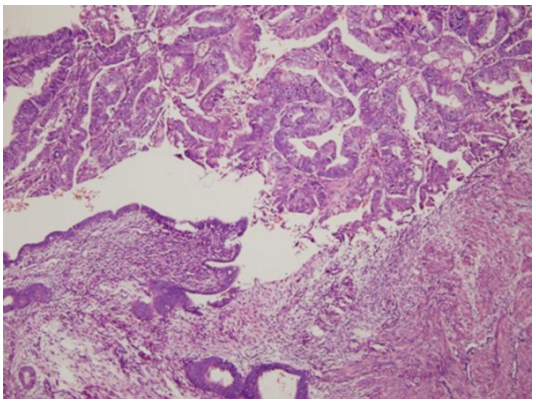

Figure 3. HE histology of grade 1 endometrioid adenocarcinoma. The surrounding endometrium present endometrioid glandular structures restricted to home position High power view. HE, × 400.

Presently, müllerian tumor is mesenchymal epithelial mixed tumors which was regarded as malignant transformation of epithelial neoplasms [9]. We consider the case we reported was mixed tumor of carcinoma and sarcoma that is named collision carcinoma. In the case, epithelial component separated from mesenchymal component and both did not have transition.

Surgery has always been described as the most effective treatment for uterine sarcomas. Total hysterectomy with bilateral salpingo-oophorectomy and complete resection of the macroscopic lesion is considered the standard treatment for ESS. Extrauterine invader needed further cytoreductive surgery and pelvic/abdominal aortic lymphadenectomy. The use of adjuvant treatment, including chemotherapy, radiation therapy and endocrine therapy remains controversial [1, 10-12].

It is generally acknowledged that the significant factors of decisive prognosis involved clinical stage, histological grade, cell differential degree, tumor size and expression of sexual hormone receptors [13-15]. Taking all these facts into account, we take a complete hysterectomy and bilateral adnexectomy with PT chemotherapy.

The patient terminated therapy when was performed in 2 courses chemotherapy over a 4-week period.

Presently there was no evidence of recurrence after postoperative follow-up period of 6 months. All in all high-grade ESS has a relative-

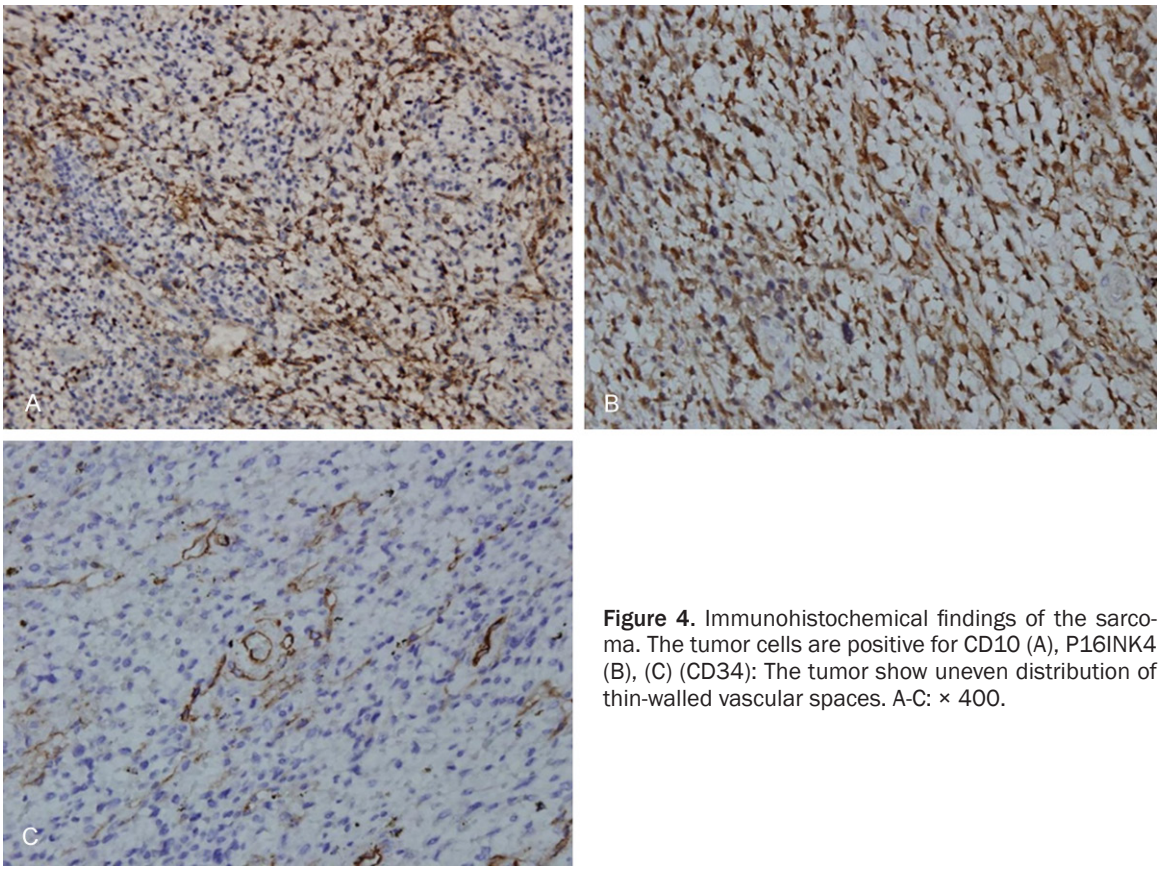

Figure 4. Immunohistochemical findings of the sarcoma. The tumor cells are positive for CD10 (A), P16INK4 (B), (C) (CD34): The tumor show uneven distribution of thin-walled vascular spaces. A-C: × 400.

ly poor prognosis, therefore, follow-up is necessary for the patients in order to make clear recurrence at an early stage.

Disclosure of conflict of interest

None.

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References

[1] Gadducci A, Sartori E, Landoni F, Zola P, Maggino T, Urgesi A, Lissoni A, Losa G, Fanucchi A. Endometrial stromal sarcoma: analysis of treatment failures and survival. Gynecol Oncol 1996; 63: 247-253.

[2] Feng W, Hua K, Gudlauqsson E, Yu Y, Zhou X, Baak JP. Prognostic indicators in WHO 2003 low-grade endometrial stromal sarcoma. Histopathology 2013; 62: 675-687.

[3] Ueda M, Otsuka M, Hatakenaka M, Sakai S, Ono M, Yoshimitsu K, Honda H, Torii Y. MR imaging findings of uterine endometrial stromal sarcoma: differentiation from endometrial carcinoma. Eur Radiol 2001; 11: 28-33.

[4] Amant F, Vergote I and Moerman P. The classification of a uterine sarcoma as 'high-grade endometrial stromal sarcoma' should be abandoned. Gynecol Oncol 2004; 95: 412-413.

[5] Celik H, Kokcu A, Yildiz L. Endometrial stromal sarcoma with coexistent endometrioid adenocarcinoma in a woman with previous breast cancer: a preliminary case report. Eur J Gynaecol Oncol 2013; 34: 493-495.

[6] McCluggage WG. Immunohistochemistry as a diagnostic aid in cervical pathology. Pathology 2007; 39: 97-111.

[7] Lee CH, Ali RH, Rouzbahman M, Marino-Enriquez A, Zhu M, Guo X, Brunner AL, Chiang S, Leung S, Nelnyk N, Huntsman DG, Blake Gilks C, Nielsen TO, Dal Cin P, van de Rijn M, Oliva E, Fletcher JA, Nucci MR. Cyclin D1 as a diagnostic immunomarker for endometrial stromal sarcoma with YWHAE-FAM22 rearrangement. Am J Surg Pathol 2012; 36: 1562-1570.

[8] Rekhi B, Motghare P. Cyclin D1 and p16INK4 positive endometrial stromal sarcoma: A case

report with new insights. Indian J Pathol Microbiol 2014; 57: 606-608.
[9] McCluggage WG. Malignant biphasic uterine tumours: carcinosarcomas or metaplastic carcinomas? J Clin Pathol 2002; 55: 321-325.
[10] Chu MC, Mor G, Lim C, Zheng W, Parkash V, Schwartz PE. Low-grade endometrial stromal sarcoma:hormonal aspects. Gynecol Oncol 2003; 90: 170-176.
[11] Li AJ, Giuntoli RL 2nd, Drake R, Byun SY, Rojas F, Barbuto D, Klipfel N, Edmonds P, Miller DS, Karlan BY. Ovarian preservation in stage I low-grade endometrial stromal sarcomas. Obstet Gynecol 2005; 106: 1304-1308.
[12] Berchuck A, Rubin S C, Hoskins WJ, Saigo PE, Pierce VK , Lewis JL Jr, Treatment of endometrial stromal tumors. Gynecol Oncol 1990; 36: 60-65.
[13] Haberal A, Kayikçioğlu F, Boran N, Calişkan E, Ozgül N, Köse MF. Endometrial stromal sarcoma of the uterus: analysis of 25 patients. Eur J Obstet Gynecol Reprod Biol 2003; 109: 209-213.
[14] Leath CA 3rd, Huh WK, Hyde J Jr, Cohn DE, Resnick KE, Taylor NP, Powell MA, Mutch DG, Bradley WH, Geller MA, Argenta PA, Gold MA. A mult-iinstitutional review of outcomes of endometrial stromal sarcoma. Gynecol Oncol 2007; 105: 630-634.
[15] Yalman D, Ozsaran Z, Baltalarli B, Demir O, Ozdemir N , Aras A. Results of postoperative radiotherapy in the treatment of uterine sarcomas: a retrospective analysis of 46 patients. Eur J Gynaecol Oncol 2008; 29: 46-51.