A rare case of endometrial stromal sarcoma

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Abstract

Endometrial stromal sarcoma is rare, comprising 10% of the uterine mesenchymal tumors, and one-half of women affected are postmenopausal. They are classified into endometrial stromal nodule and endometrial stromal sarcoma that are low-grade malignant tumors of uterus. They are indolent tumors with local recurrences and distant metastasis occurring even 20 years after initial diagnosis. Most endometrial stromal sarcomas stained positively for CD10, estrogen receptor, progesterone receptor, and bcl-2, mostly in a diffuse pattern.

The present case is of a 45 years female patient presented with abdominal pain and irregular menstruation, white discharge, bleeding per vagina for last six months. She had undergone tubectomy 6 years ago. Per abdominal examination revealed distended abdomen with aversion of umbilicus. There was no evidence of free fluid in the abdomen. Ultrasonography was carried out which revealed a bulky uterus with solid lesion in the myometrium showing heterogenous echo texture. Total vaginal hysterectomy was carried out and the specimen was sent to department of pathology. Grossly, the uterus was large, globular and firm. The cut-section shows bulky tumour, greywhite-to-yellow nodular mass in colour, with infiltrating margins, measuring about 5.0 X 5.0 X 4.0 cms. The endometrium is distorted by the tumour. Microscopically, the uterus showed tumour composed of small-to-medium sized cells, round-to-oval & spindle shaped cells with large hyperchromatic nuclei and occasional mitosis, small amount of cytoplasm. These tumour cells are showing infiltrating margins, focal necrosis, hemorrhage, local invasion and lymphatic emboli. Immunohistochemistry showed CD 10, Estrogen, and Progesterone receptors positive. It was confirmed that as endometrial stromal sarcomas which is presented here for its rarity.

Key-words: Uterus, endometrial stromal sarcoma, low grade

Introduction

Endometrial stromal sarcomas are low-grade malignant tumors of uterus. The endometrial stroma occasionally gives rise to neoplasms that may resemble normal stromal cells. Similar to most neoplasms, they may be well or poorly differentiated. Stromal neoplasms are divided into two categories: (1) benign stromal nodules and (2) endometrial stromal sarcomas[1].

Grossly, endometrial stromal sarcomas may be polypoidal and fill the endometrial cavity, or they may diffusely invade the myometrium. Large masses of spindle cells with scant cytoplasm dissect the myometrium and invade vascular channels. The tumor cells resemble endometrial stromal cells in the proliferative phase. Nuclear atypia may be minimal to severe and mitotic activity may be restrained. Expression of CD 10 and estrogen and progesterone receptors helps confirm the diagnosis [2]. Characteristic of endometrial stromal sarcoma is an early and extensive invasion of the lymphatic vascular spaces of the myometrium and penetration into tissue clefts of the myometrium without destruction and necrosis. Ultrastructurally, the uniform tumor cells resemble the stromal cells of the early proliferative phase. Mitotic activity is low but may also be moderate to pronounced [3].

Uterine sarcomas are relatively rare tumors of mesodermal origin. They constitute 2% to 6% of uterine malignancies. There is an increased incidence of uterine sarcomas after radiation therapy to the pelvis for either carcinoma of the cervix or a benign condition. The relative risk of uterine sarcoma after pelvic radiotherapy has been estimated to be 5.3%, with an interval of usually 10 to 20 years. Uterine sarcomas are, in general, the most malignant group of uterine tumors and differ from endometrial cancers

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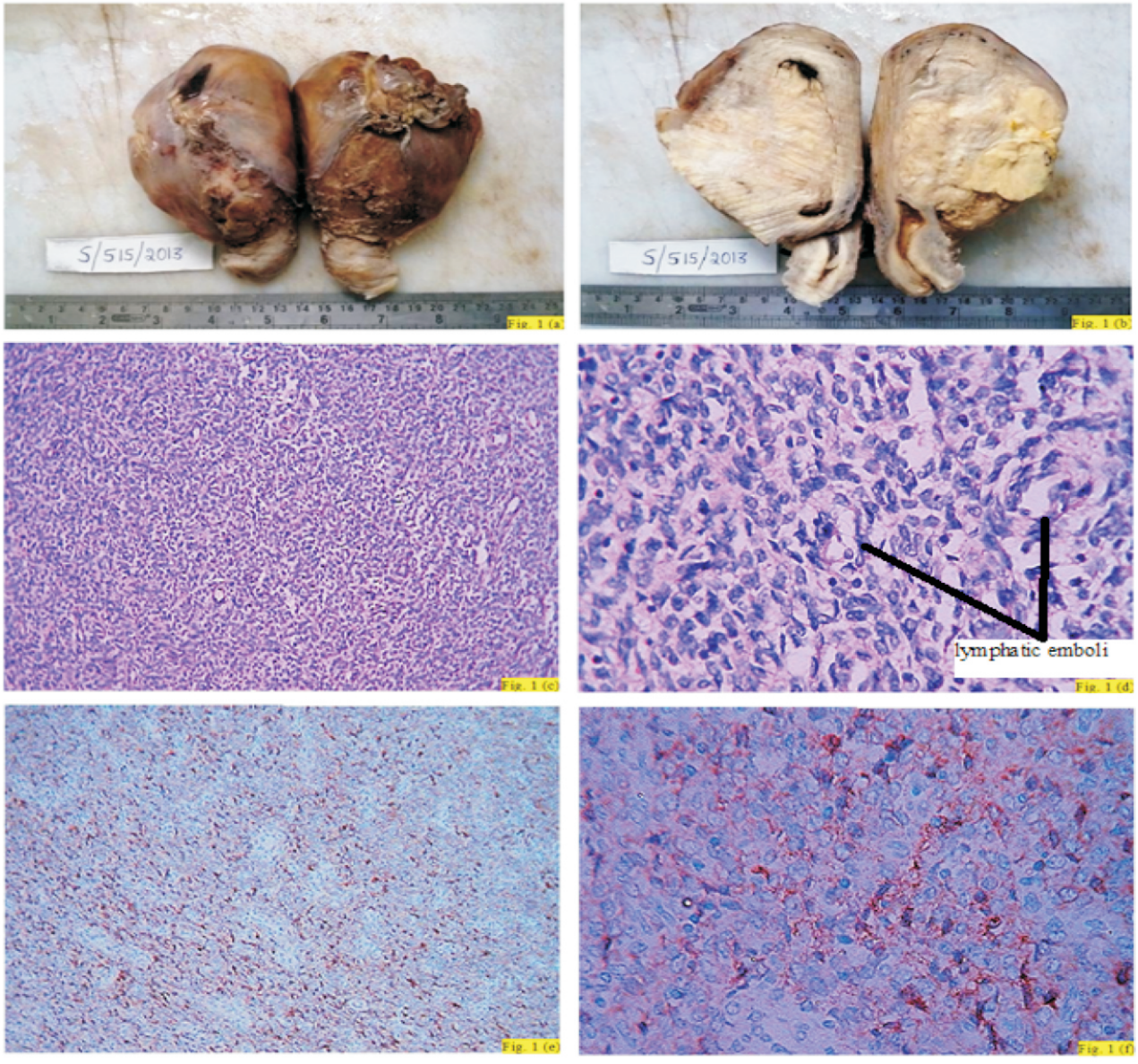
with regard to diagnosis, clinical behavior, pattern of spread, and management [4].

Case Report

A 45 years female patient presented with abdominal pain and irregular menstruation associated with white discharge and bleeding per vagina for last 6 months. The patient had undergone tubectomy 6 years ago. Per abdominal examination revealed distended abdomen with eversion of umbilicus. There was no evidence of free fluid in the abdomen.

Ultrasonography was carried out which showed bulky uterus with solid lesion in the myometrium showing heterogenous echo texture. Grossly, the uterus is large, globular and firm [Fig. 1(a)]. The cut-section shows bulky tumour, greywhite-to-yellow nodular mass in colour, with infiltrating margins, measuring about 5.0 X 5.0 X 4.0 cms. The endometrium is distorted by the tumour [Figure. 1(b)]. Microscopically, the uterus showed tumour composed of small-to-medium sized cells, round-to-oval and spindle shaped cells with large hyperchromatic nuclei and occasional mitosis, small amount of cytoplasm [Figure. 1(c)]. These tumour cells are showing infiltrating margins, focal necrosis, hemorrhage, local invasion and lymphatic emboli [Figure. 1(d)]. Immunohistochemistry showed CD 10, estrogen and progesterone receptors positive [Figure. 1(e) and Figure. 1(f)].



Figures 1(a) to (e and f)

Figure 1(a) - Grossly, the uterus is large, globular and firm.
Figure 1 (b) - Cut-section showing greywhite to yellow nodular mass, with infiltrating margins and distorting endometrium.
Figure 1(c) - Photomicrograph of H&E stained (10 X) showing tumor of small, round & spindle cells.
Figure 1(d) - Photomicrograph of H&E stained (40 X) showing occasional mitosis and lymphatic emboli.
Figure 1(e & f) - Photomicrograph of IHC (10 X) showing positivity for CD 10, estrogen and progesterone receptors.

Discussion

Uterine sarcomas are relatively rare tumors of mesodermal origin. They constitute 2% to 6% of uterine malignancies. [4] Neoplastic change can occur in the endometrial stroma as well as the endometrial glands, but stromal neoplasms are much less common [5]. Endometrial stromal nodules are primarily located in the myometrium and an obvious connection to the endometrium is not necessary for diagnosis.

On gross examination, endometrial stromal sarcomas exhibit a tan to yellow cut surface with an infiltrative margin into the surrounding myometrium, often with foci of hemorrhage and necrosis. Histologically, these tumors are composed of sheets of small cells with scant cytoplasm and an accompanying vascular pattern reminiscent of the spiral arterioles present in the stroma of proliferative phase endometrium. These tumors are strongly and diffusely positive with CD 10 (although a minority of cases may show weak positivity) and are desmin negative. Endometrial stromal sarcomas predominantly occur in middle-age women, and do not share the same risk factors as endometrial carcinoma. Extensive lymphatic invasion is the hallmark of the tumor.

Hysterectomy is the treatment of choice. Because some of the tumor cells are positive for progesterone receptors, hormonal therapy following excision is a treatment option. Patients with early stage disease have 5-year survival rates of 90%; recurrence may occur in up to 25% of the patients, often several years to a decade or more following the primary diagnosis.[6] Ultrastructurally, the uniform tumor cells resemble the stromal cells of the early proliferative phase. Mitotic activity is low but may also be moderate to pronounced. Plaques of hyalinized collagen between the tumor cells may be prominent, in addition to a dense reticular network. Whereas most of these stromal sarcomas have a uniform pattern, a plexiform sex-cord like arrangement is occasionally seen. In some cases tubular differentiation can be found. Focally, papillary structures may also be observed.

Therefore the tumor requires morphologic differential diagnosis under the category of endometrial stromal nodule according to the criteria described above. This includes (a) Undifferentiated endometrial sarcoma, (b) Leiomyoma with or without intravenous spread and (c) Low-grade adenosarcoma. Undifferentiated endometrial sarcoma is a high-grade tumor and consists of cells with marked cellular atypia and numerous mitoses. The growth pattern is destructive and infiltrative. In contrast to endometrial stromal sarcoma, the neoplastic cells in leiomyoma with or without intravenous spread are positive with markers for h-caldesmon and oxytocin receptors. Finally, the formation of papillae in ESS may require their distinction from papillary structures of serous carcinomas: the sarcomatous papillae express CD10 and no cytokeratins, they also lack an epithelial covering [7,8]. The majority of cases of ESS were CD 101, ER 2/1, SMA 2/1 and MSA 2/1 whereas the majority of cases of UCL and ULS were CD 102, ER 2/1, SMA 1, and MSA 1.

About half of stromal sarcomas recur, with relapse rates of 36% to over 80% for stage I and stage III/IV tumor, respectively; relapse cannot be predicted by either mitotic index or degree of cytological atypia. Distant metastases may occur decades after initial diagnosis, and death from metastatic tumor occurs in about 15% of cases. Five-year survival rates average 50%. A recurrent chromosomal translocation, t(7;17)(p15;q21), occurs in endometrial stromal sarcoma. This translocation leads to the fusion of two polycomb group genes, JAZF1 and JJAZ1, with production of a fusion transcript with anti-apoptotic properties [1].

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