

## Endometrial stromal sarcoma mimicking a myoma

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Uterine malignancies are not uncommonly misdiagnosed for the more ubiquitous leiomyoma. A case of endometrial stromal sarcoma with ultrasound and color Doppler imaging is described. (*Fertil Steril*® 2009;92:1744–6. ©2009 by American Society for Reproductive Medicine.)

**Key Words:** Endometrial stromal sarcoma, uterus, ultrasonography, color Doppler

A 28-year-old woman with regular cycles was evaluated for dysmenorrhea. Examination revealed a uniformly enlarged uterus of 10 weeks' size. Transvaginal ultrasound revealed a uterus measuring 9.6 × 7.7 cm with a well-defined hyperechoic lesion located in the left lateral aspect measuring 6.1 × 5.8 cm (Fig. 1). It was distorting the endometrial cavity, but distinct from it and had cystic spaces. This was thought to be a degenerated myoma. Surprisingly, there was increased vascularity on color Doppler (Fig. 2). Diastolic flow was increased; the resistance and pulsatility index being 0.21 and 0.2, respectively (Fig. 3). A repeat ultrasound examination after two doses of triptorelin depot at monthly intervals showed no change in either the size or vascularity.

Endometrial cavity was normal on hysteroscopy. At laparoscopy, a transverse incision was made on the posterior aspect of the enlarged uterus over the swelling. No definite “myoma” or plane of cleavage was seen despite deepening the incision to the endometrial cavity. A myometrial biopsy was therefore taken.

Histopathologic examination revealed a cellular neoplasm composed of oval to spindle cells with dilated vascular spaces (Fig. 4a). These cells had scanty cytoplasm and hyperchromatic nuclei. Scattered mitotic figures and some areas of smooth muscle differentiation were seen. Tumor cells were moderately to strongly positive for CD 10 on immunohistochemistry (Fig. 4b). The picture was suggestive of low-grade endometrial stromal sarcoma with smooth muscle differentiation.

Received January 31, 2008; revised May 18, 2008; accepted August 26, 2008; published online October 20, 2008.

K.J. has nothing to disclose. A.K.K. has nothing to disclose. P.M. has nothing to disclose. A.M.N. has nothing to disclose. A.R. has nothing to disclose. J.K. has nothing to disclose.

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### FIGURE 1

Enlarged uterus with well-defined hyperechoic lesion measuring 6.1 × 5.8 cm (arrow).



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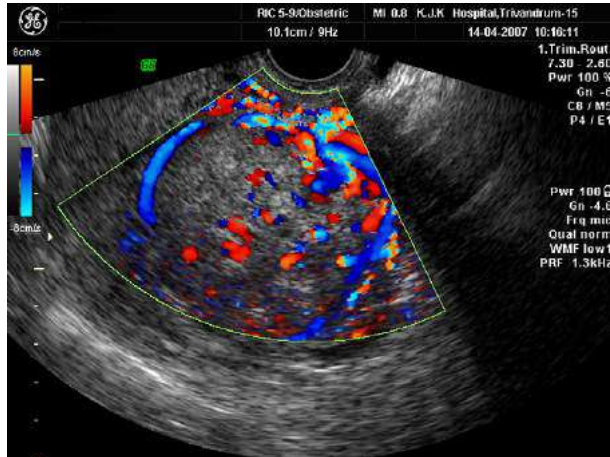
### DISCUSSION

Malignant tumors of the uterine corpus are infrequently encountered and may be mistaken for leiomyomas. Endometrial stromal sarcomas (ESS) are rare mesodermal tumors, being one of the three common variants of uterine sarcomas, the other ones being leiomyosarcomas and mixed Müllerian tumors. ESS are classified into low- or high-grade types, with the latter having 10 or more mitotic figures per high power field. ESS presents commonly with menstrual symptoms and pain (1).

Diagnosis of ESS has been tricky on both imaging and histopathology (2). Although they resemble leiomyomas on ultrasound, lesions may show hyperechoic and anechoic areas

**FIGURE 2**

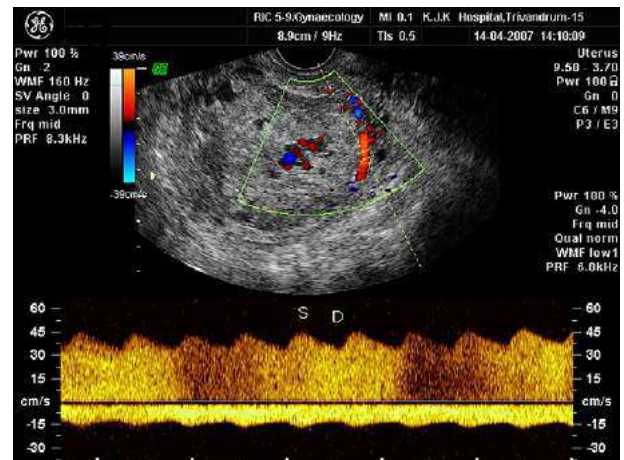
Increased vascularity on color Doppler.



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**FIGURE 3**

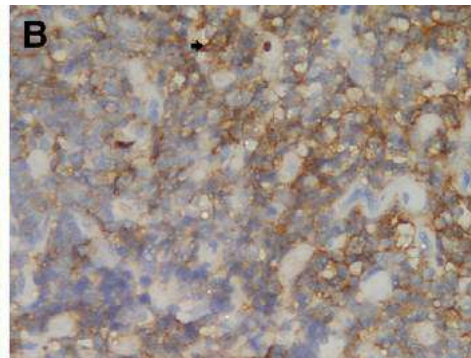
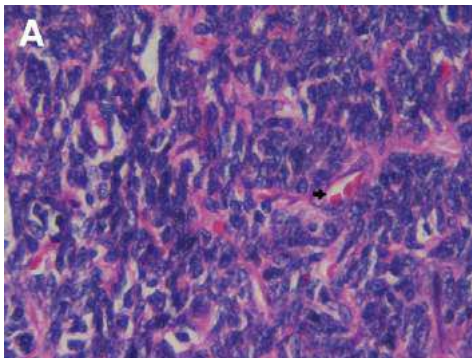
Doppler wave form analysis. An increased diastole flow (D) in relation to systole (S) indicates a low resistance pattern. This gives a low RI and PI, which may suggest malignancy.



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**FIGURE 4**

(a) Sheets of stromal sarcoma cells with thin walled blood vessels (arrow) in between; H&E ( $\times 400$ ). (b) CD10 positivity in the cytoplasm of stromal sarcoma cells (colored brown; arrow showing area of strong positivity) ( $\times 400$ ).



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as in myomas with cystic degeneration (1, 3). Color Doppler shows increased vascularity with low resistance flow.

Magnetic resonance appearance, although similar to that of leiomyoma, frequently has an infiltrative margin. T2-weighted images are helpful in detecting the endometrial nature of the disease and its relationships with surrounding myometrium. Bands of low signal intensity are observed within the areas of myometrial involvement. Tumor extension along the vessels or ligaments is another characteristic feature (1, 4, 5).

Endometrial stromal sarcomas have been frequently missed on histopathologic examination, being most commonly mistaken as a cellular myoma. Use of new immunohistochemical markers such as CD10 and h-caldesmon has been useful in reliably diagnosing ESS (2, 6).

To conclude, a routine Doppler study during ultrasound examination for suspected leiomyomas might provide the first clue of an underlying malignancy. Magnetic resonance imaging will serve as a useful adjunct.

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