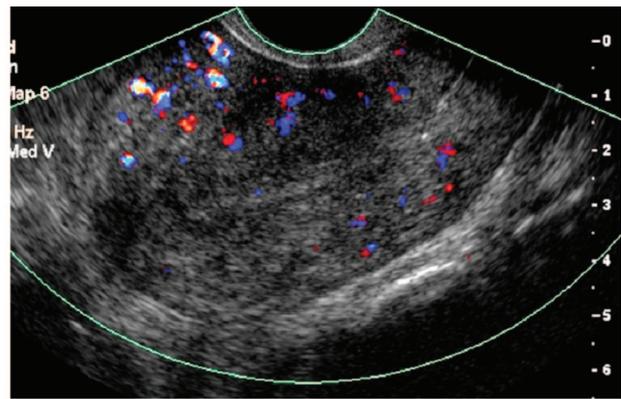
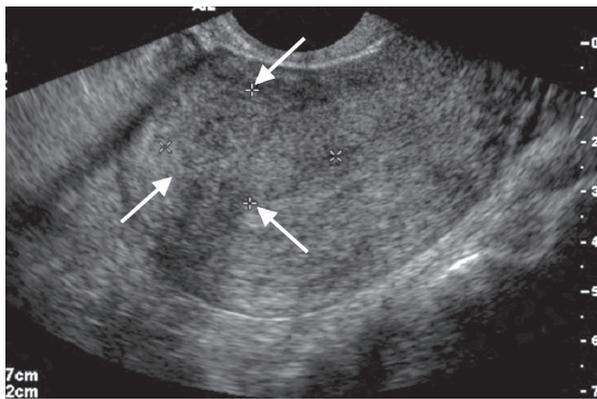


11.

12.

Figures 11, 12. (11) Diffuse adenomyosis in a 27-year-old woman. Transvaginal US image shows uterine enlargement and heterogeneity of the myometrium. The US findings reflect an infiltrative process with islands of heterotopic endometrial tissue scattered diffusely throughout and poorly demarcated from surrounding myometrium. (12) Diffuse adenomyosis. Transvaginal US image reveals tiny subendometrial cysts (arrow) representing dilated glands of ectopic endometrial tissue, findings highly specific for diffuse adenomyosis.



a.

b.

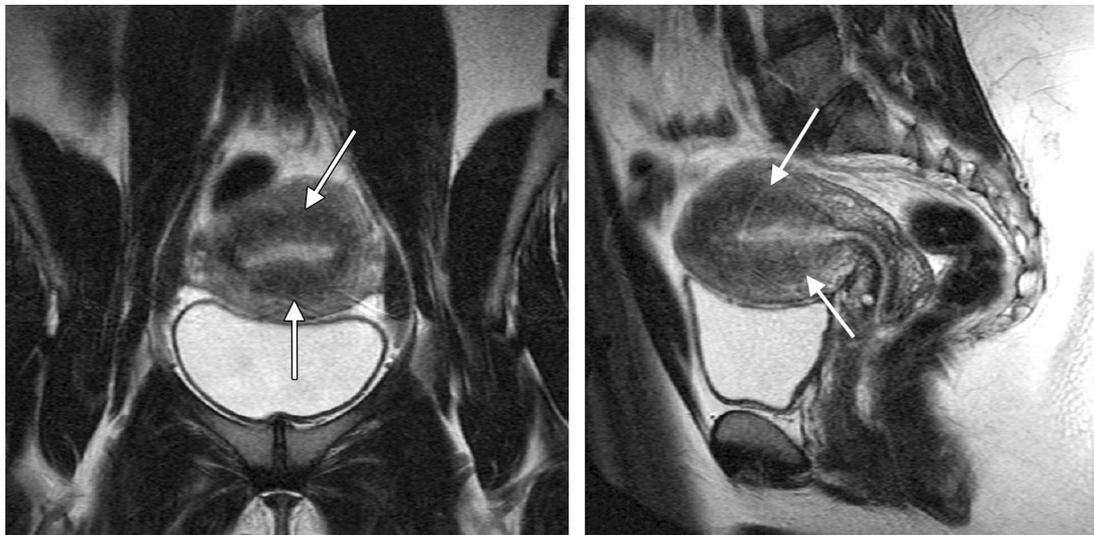
Figure 13. Focal adenomyosis. (a) Transvaginal US image demonstrates an echogenic mass with ill-defined borders (arrows), findings characteristic of the focal form of adenomyosis. (b) Color Doppler US image shows a penetrating vascular pattern within the mass.

tomy is the only definitive treatment. The second goal is to determine the extent and depth of myometrial penetration for conservative treatment (endometrial ablation). The third goal is to monitor the evolution of the disease during conservative therapy (26–30). There is no characteristic vascular pattern observed at color and power Doppler US.

Transvaginal US Appearance of Diffuse Adenomyosis.—The heterogeneous appearance of the myometrium includes uterine enlargement and asymmetry of the anterior or posterior myometrial wall. The heterogeneous appearance reflects the infiltrative process of islands of heterotopic endometrial tissue that are scattered diffusely throughout the myometrium and that are poorly demarcated from the surrounding myometrium (28,29) (Fig 11). In addition, subendometrial tiny cysts or nodules can be seen in diffuse

adenomyosis (30). The appearance of these cysts and nodules reflects cyclic functions of ectopic endometrial glands. The presence of myometrial cysts (in up to 50% of cases) is highly specific for adenomyosis (29) (Fig 12).

Transvaginal US Appearance of Focal Adenomyosis (Adenomyoma).—The characteristic US appearance of focal adenomyosis (adenomyoma) is the presence of an echogenic mass with ill-defined borders. These conglomerations of endometrial tissue are often difficult to recognize. Color and power Doppler US demonstrate the penetrating vascular pattern within the mass and facilitate making the diagnosis of focal adenomyoma (31) (Fig 13).



a. **b.**
Figure 14. Diffuse adenomyosis in a 37-year-old woman. Coronal (**a**) and sagittal (**b**) T2-weighted turbo spin-echo (6000/120) images depict markedly diffuse enlargement of the junctional zone (arrows) replacing normal myometrium.

Differentiation of Adenomyoma from Fibroids with Transvaginal US.—The echogenicity of the mass, its border characteristics, and its vascular pattern are the three distinguishing features that can be used to differentiate adenomyoma from fibroids. In an adenomyoma, the echogenicity of the mass is increased compared with the surrounding myometrium. The border of the mass is poorly defined, and vascularity is seen inside the mass (penetrating pattern). In contrast, fibroids manifest as hypoechoic masses with well-defined borders. Vascularity in the fibroid is seen only in the periphery of the mass (draping pattern). It has been suggested that color and power Doppler analysis optimized for slow flow is the most effective technique for differentiating adenomyoma from fibroids with transvaginal US.

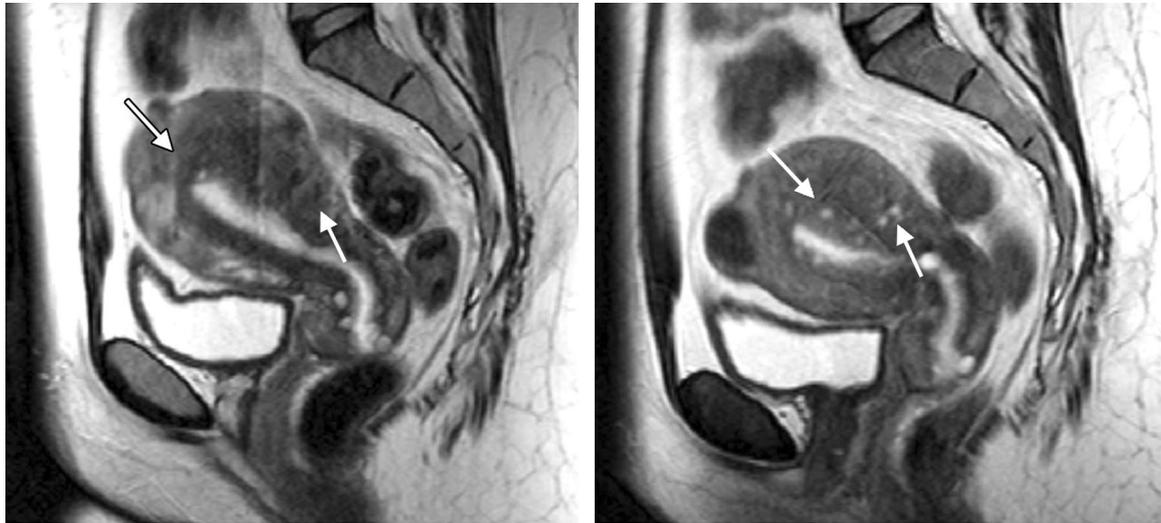
The overall sensitivity and specificity of transvaginal US for the diagnosis of adenomyosis are 80%–86% and 50%–96%, respectively(30). The technique has an accuracy ranging from 68% to 86% in different studies (30).

MR Imaging of Diffuse Adenomyosis.—The diffuse form of adenomyosis is characterized by enlargement of the uterus with diffuse thickening of the endometrial-myometrial junction (junc-

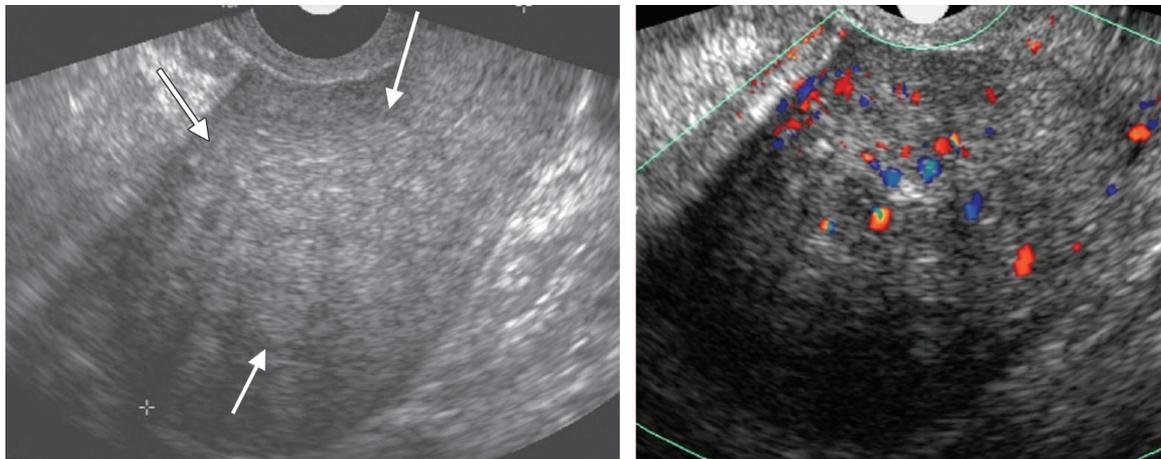
tional zone), which has low signal intensity on T2-weighted MR images. The normal width of the junctional zone is up to 8 mm. Widening of the junctional zone from 8 mm up to 12 mm is suggestive of focal adenomyosis, whereas a junctional zone that is 12 mm wide or greater is diagnostic of diffuse adenomyosis. The low-signal-intensity thickening of the junctional zone represents pathologic hypertrophy of smooth muscle surrounding islands of heterotopic endometrial glands (30,32–37) (Fig 14).

MR Imaging of Focal Adenomyosis (Adenomyoma).—The diagnostic features of focal adenomyosis are the presence of oval, ill-defined, low-signal-intensity masses (ie, adenomyomas) on T2-weighted MR images (36). Bright, tiny foci, either linear or round, within the masses are often noticed on T1- or T2-weighted images (Fig 15). High-signal-intensity foci on T1-weighted images represent hemorrhages, whereas high-signal-intensity foci on T2-weighted images correspond to dilated endometrial glands in the secretory phase (35,37,38).

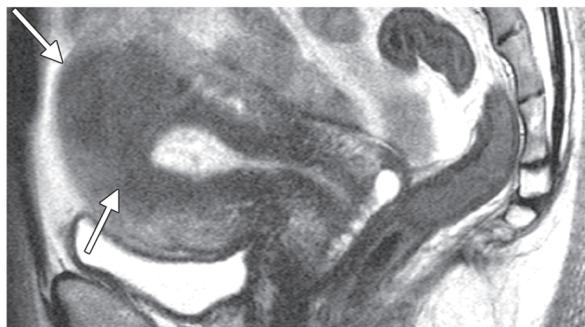
Differentiation of Adenomyoma from Fibroids with MR Imaging.—MR imaging is highly accurate and more sensitive than transvaginal US in differentiating adenomyoma from fi-



a. **b.**
Figure 15. Focal adenomyosis. **(a)** Sagittal T2-weighted turbo spin-echo (4900/120) MR image shows focal widening of the junctional zone (arrows) in the posterior wall of the uterine fundus. **(b)** Sagittal image obtained during the secretory stage of the menstrual cycle demonstrates a change in appearance, especially high-signal-intensity foci (arrows).



a. **b.**
Figure 16. **(a)** Gray-scale transvaginal US image shows a poorly echogenic mass (arrows). **(b)** Color Doppler image demonstrates a penetrating vascular pattern. **(c)** Sagittal T2-weighted turbo spin-echo (4900/120) MR image shows focal widening of the junctional zone (arrows) in the fundus of the uterus.



c.
 with low signal intensity on T1- and T2-weighted MR images, is characteristic of fibroids (Figs 16, 17). Gadolinium-enhanced T1-weighted sequences do not give information that is useful in the diagnosis of adenomyosis or differentiation from fibroids.

broids. Focal thickening of the junctional zone greater than 12 mm is diagnostic for adenomyoma, whereas an oval, well-defined mass in the myometrium, separate from the junctional zone,