Rectosigmoid endometriosis with unusual presentation at magnetic resonance imaging

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We report on a patient with a bowel endometriotic nodule that was hypointense on both T1- and T2-weighted magnetic resonance imaging (MRI); histologic examination revealed that the MRI appearance of the nodule was due to the presence of extensive fibrosis. Bowel endometriotic nodules with extensive fibrosis and limited endometrial tissue have a signal intensity similar to that of the muscle on both T1- and T2-weighted images. In these patients, additional techniques such as multislice computed tomography enteroclysis may be used for adequate diagnosis before surgery. (Fertil Steril® 2009;91:278–80. ©2009 by American Society for Reproductive Medicine.)

Key Words: Diagnosis, bowel endometriosis, endometriosis, magnetic resonance imaging, multidetector computed tomography

A preoperative diagnosis of bowel endometriosis is required to obtain adequate consent from the patient and to plan the surgical procedure. Magnetic resonance imaging (MRI) has been widely used for the diagnosis of bowel endometriosis (1, 2). The diagnosis of endometriosis is improved by the recognition of the hemorrhagic content within the lesions. The presence of products of hemoglobin degradation markedly shortens the T1 of fluids; for this reason, fluids signal is dark in T1-weighted sequences and becomes hyperintense (brighter) in cases of hemorrhagic content. At the beginning of the physiologic hemorrhage in the nodule, the T2 signal is low; after lysis, red blood cells precipitate, and the extracellular methemoglobin appears hyperintense in T1-weighted imaging. The serum becomes hyperintense in T2. Endometriotic nodules predominantly have high T1 and low T2 signals. We report on a patient with a bowel endometriotic nodule that was hypointense on both T1- and T2-weighted MRI images (Figs. 1 and 2).

The patient underwent multidetector computed tomography enteroclysis (MDCTe) (3). Briefly, after intestinal

Figure 1

T1-weighted magnetic resonance image of a bowel endometriotic nodule (black arrows).

preparation and hypotonization, the colon was retrogradely distended by introducing 2000 mL of water. After injection of iodinated contrast medium, the patient was scanned on a 16-row MDCT scanner (LightSpeed, GE Medical Systems, Waukesha, Wisconsin). Evaluation of the axial plane and multiplanar reconstructions allowed clarifying the

**FIGURE 2**

T2-weighted magnetic resonance image of the bowel endometriotic nodule shown in Figure 1 (black arrows).

![Image of T2-weighted magnetic resonance image](image1)

**FIGURE 3**

Multidetector computed tomography enteroclysis (MDCTe) of the bowel endometriotic nodule showed in Figure 1 (white arrows). Sagittal reconstruction is shown on the left, and axial plane is shown on the right.

![Image of MDCT examination](image2)
characteristics of the nodule (Fig. 3). The patient underwent laparoscopic bowel resection. Histologic examination demonstrated the endometriotic origin of the nodule and revealed the presence of extensive fibrosis (Fig. 4).

When bowel endometriotic nodules contain limited endometrial tissue and extensive fibrosis (4), the presentation at MRI may be unusual. Nodules with extensive fibrosis have signal intensity similar to that of the muscle on both T1- and T2-weighted MRI images. For patients with pain and gastrointestinal symptoms that have unusual findings at MRI, MDCTe should be used.

REFERENCES

FIGURE 4
(Left) The macroscopic appearance of the bowel nodule showed in Figure 1. Extensive fibrosis (asterisk) is present. (Right) The histologic section demonstrates the presence of endometriotic glands and stroma (hematoxylin-eosin staining). The black arrow indicates where this histologic section was obtained.