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Case Report

Is Magnetic Resonance Imaging Sufficient to Diagnose Rudimentary Uterine Horn? A Case Report and Review of the Literature

Kate Devine, MD*, Tara McCluskey, MD, Melinda Henne, MD, Alicia Armstrong, MD, MHSCR, Aradhana M. Venkatesan, MD, and Alan DeCherney, MD

From the Program in Reproductive and Adult Endocrinology, National Institutes of Health, Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, Maryland (all authors).

ABSTRACT Imaging is often part of the evaluation of gynecologic disorders, with transvaginal ultrasound being the most frequently used imaging modality. Although laparoscopy, hysterosalpingography, and hysteroscopy can add diagnostic accuracy, they are invasive and costly. Magnetic resonance imaging (MRI) has been increasingly used because it is both noninvasive and highly accurate. Although MRI is more expensive than ultrasound, it is less so than surgery. Given the demonstrated accuracy of MRI in assessing müllerian anomalies, additional imaging is not often sought once an MRI diagnosis is made. However, when imaging findings are not pathognomonic via MRI or otherwise, inaccurate diagnoses and their consequences may occur. We describe the case of a 21-year-old woman with unilateral dysmenorrhea whose MRI features suggested a unicornuate uterus with a hematometrous noncommunicating horn although laparoscopy ultimately revealed a necrotic myoma without an accompanying müllerian anomaly. Journal of Minimally Invasive Gynecology (2013) 20, 533–536 Published by Elsevier Inc. on behalf of AAGL.

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Müllerian anomalies have varying presentations, some of which overlap with more common diagnoses. Pelvic pain represents one such presenting symptom and imposes considerable distress. Its broad range of etiologies, both gynecologic and nongynecologic, makes pelvic pain a frustrating symptom for patients and physicians alike. Proper evaluation often may involve one or more diagnostic imaging modalities, and treatment may be medical or surgical. Although current imaging modalities such as magnetic resonance imaging (MRI) and 3-dimensional (3D) ultrasound are highly predictive of müllerian anomalies, it is important to bear uncommon presentations of common pathologies in mind. We report the case of a 21-year-old woman with unilateral dysmenorrhea whose 3D ultrasound and MRI suggested a müllerian anomaly. However, during laparoscopy, a necrotic myoma was ultimately diagnosed.

Case Report

A 21-year-old, nulligravid, morbidly obese woman (body mass index of 40) was referred to an academic center for further evaluation and treatment of a possible noncommunicating uterine horn identified on ultrasound performed for the evaluation of dysmenorrhea. She was evaluated and treated under an NIH IRB-approved protocol. The young woman reported intermittent left-sided cramping and pelvic pain since menarche. Although most often associated with menses, the pain occasionally occurred at other times during the menstrual cycle. The pain had been satisfactorily managed by oral contraceptives from menarche to the current presentation. When the patient discontinued oral contraceptives to attempt pregnancy, disabling pain resumed. Her symptoms

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Corresponding author: Kate Devine, MD, Program in Reproductive and Adult Endocrinology, National Institutes of Health, Eunice Kennedy Shriver National Institute of Child Health and Human Development, Building 10, CRC, Room 1-3140, 10 Center Drive, MSC 1109, Bethesda, MD 20892-1109.
E-mail: kate.devine@nih.gov

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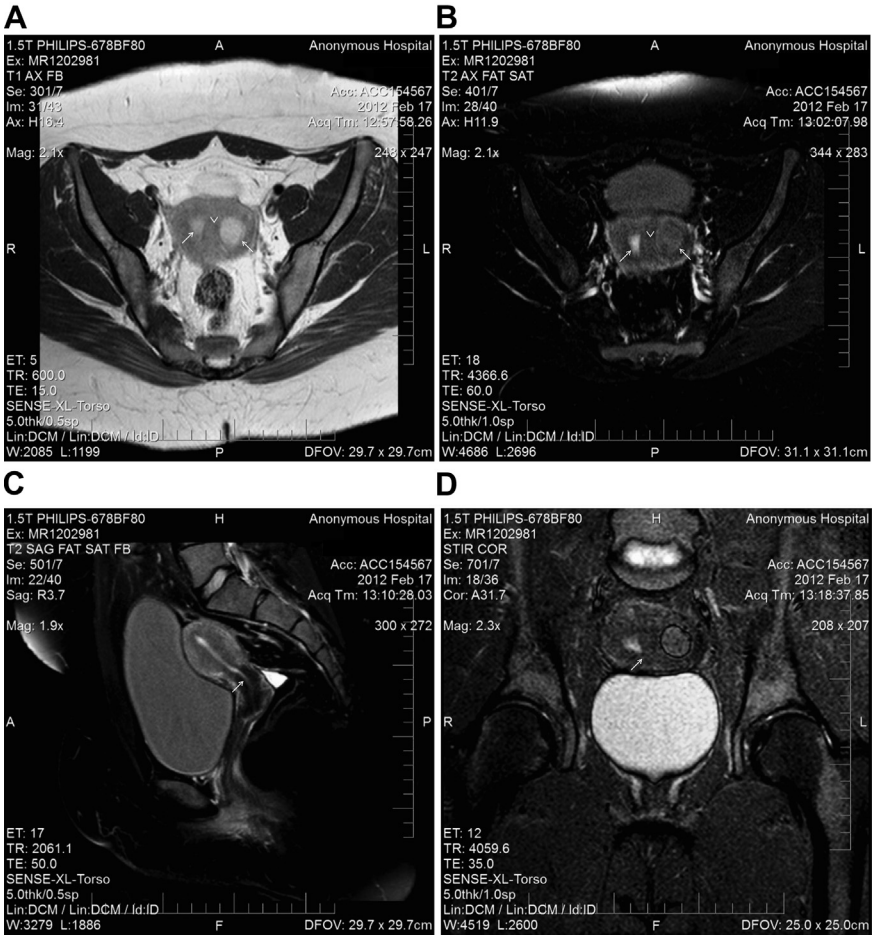
Fig. 1

(A) An axial T1-weighted image of the pelvis and **(B)** an axial T2-weighted image with fat suppression suggesting uterine cavities (*arrow*) with a thick intervening myometrium (*arrowheads*). The T1 hyperintense, T2 intermediate signal of the presumptive left cavity is notably atypical of leiomyoma and suggest necrosis and/or hemorrhage. **(C)** A sagittal T2-weighted image with fat suppression suggests the continuation of a right uterine cavity to the cervix (*arrow*) (not shown: the left "cavity" does not communicate with the right cavity or the cervix). **(D)** Coronal inversion recovery images suggest 2 separate cavities with only a right cavity continuous with the endocervix (*arrow*).



caused her to miss school and work, and she required narcotics for pain control. She had no significant medical history and no previous surgeries.

On physical examination, her abdomen was nontender, and her external genitalia were normal. She had a single cervix apparent via a speculum. On bimanual examination, no tenderness, fullness, or discrete masses were appreciated; however, it was difficult to palpate her uterus and ovaries secondary to body habitus. Two-dimensional (2D) and 3D transvaginal ultrasounds revealed a rightward-deviated uterus with an adjacent walled structure. The walls of the structure were isoechoic to the myometrium and contained hyperechoic material. The endometrium distinct from echogenic contents was not visualized. The right uterine cavity continued to the endocervix and did not communicate with the contents of the left uterine structure.

Subsequent MRI of the pelvis showed a marked deformity of the uterus suggesting partial duplication. The interpreting radiologist had expertise in gynecologic MRI, and the study was reviewed by radiology and gynecology staff during a formal interdepartmental conference. A right uterine horn was suggested, leading to a single cervix, with a distorted left horn remnant that appeared to be dilated by hydro-/hematometra (Fig. 1). No renal abnormality was noted. Both ovaries appeared within normal limits. The presumed diagnosis of a noncommunicating horn with a hematometra was consistent with the patient's history of longstanding cyclic left-sided pain that resolved with hormonal suppression via oral contraceptives.

The patient was counseled for the resection of a left uterine horn based on the radiographic findings. A robotic-assisted laparoscopic approach was planned. The patient underwent diagnostic laparoscopy before engaging the robot to confirm the diagnosis and assess the feasibility of excising the horn. Laparoscopy revealed a bulbous contour of the left uterus but failed to show the pronounced convexity expected