

Imaging Diagnosis of Uterine Anomalies

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CLINICAL PRESENTATION: WE ILLUSTRATE THE BENEFITS OF imaging for diagnosis of uterine anomalies with two clinical cases recently evaluated at our hospital.

The first patient (A) is a 21-year-old female, who is being evaluated for possible uterine anomaly. A pelvic ultrasound (US) three years prior had suggested a uterine anomaly.

The second patient (B) is a 34-year-old female presenting for evaluation of uterine anomaly following multiple pregnancy losses in the second trimester.



Figure 1.

IMAGING FINDINGS:

Figure 1 shows the 2D US images from Patient A, obtained three years prior for evaluation of pelvic pain. Two endometrial cavities are seen and the diagnosis of uterus didelphys was suggested (white arrows).

Figure 2 shows the MRI images from Patient A, which confirm the diagnosis of uterus didelphys, and show two separate uterine horns, widely separated (white arrows), as well as two cervixes (white arrowheads) and two vaginal canals (white arrows).

Figure 3 shows the 3D US image from Patient B showing a septate uterus, with two endometrial cavities seen (white arrows) and a flat outer contour of the uterus (white arrowhead).

Figure 4 shows the hysterosalpingogram (HSG) from Patient B showing two endometrial cavities (white arrows). This appearance can be seen with septate uterus or bicornuate uterus. Evaluation of the outer uterine myometrial contour is necessary to make an accurate diagnosis.

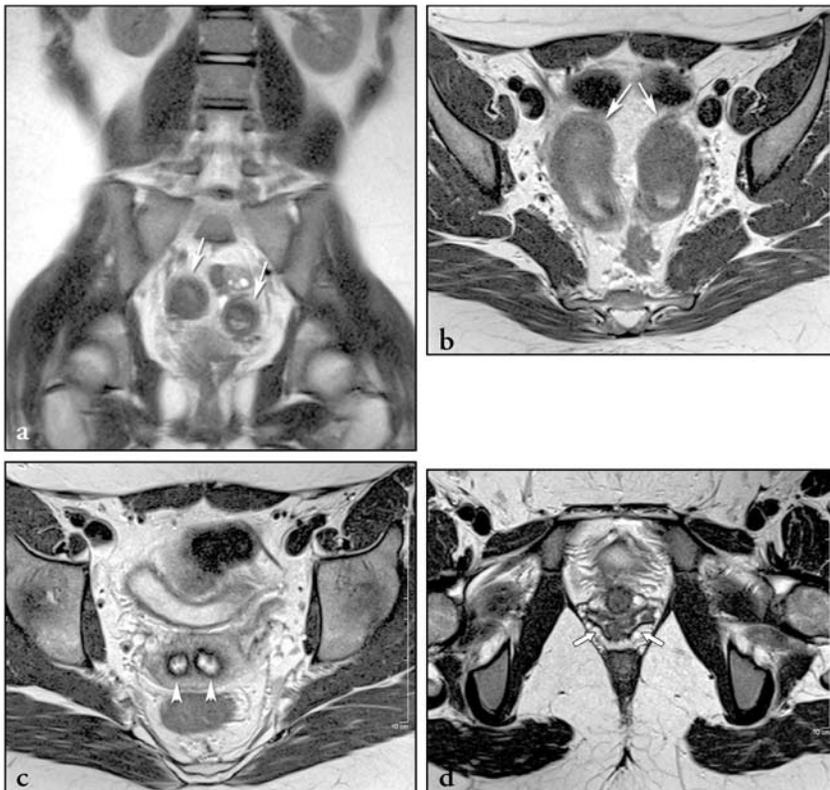
Figure 5 shows multiplanar MRI images showing two endometrial cavities (white arrowheads), with a septum extending to the cervix (white arrow). The outer myometrial contour is well seen and is flat. This establishes the diagnosis of septate uterus.

DISCUSSION:

Congenital uterine anomalies are rare in women with normal reproductive outcomes, but affect up to 25% of women with recurrent pregnancy losses.¹ The diagnosis can be difficult to establish. However, precise diagnosis of the type of anomaly is critical, as treatment and reproductive outcomes vary significantly depending on the type of anomaly. The American Fertility Society classification² is the most commonly used in describing congenital uterine anomalies, which include agenesis/hypoplasia, unicornuate, didelphys, bicornuate, septate, arcuate, and diethylstilbestrol (DES) drug related.

Uterus didelphys results from failure of fusion of the two müllerian ducts during embryogenesis. The duplication often involves the uterus and cervix, but can include duplication of the vaginal canal as well, as seen in this case.

Septate uterus is the most common congenital uterine anomaly, and has the worst reproductive outcomes.³ It results from failure of resorption of the midline septum between the two müllerian ducts during embryogenesis. The septum can be partial, or can extend to the cervix, and possibly into the vagina as well. Septa can be muscular or fibrous, and are often surgically resected in an attempt to improve pregnancy outcome.



Figures 2a-d.

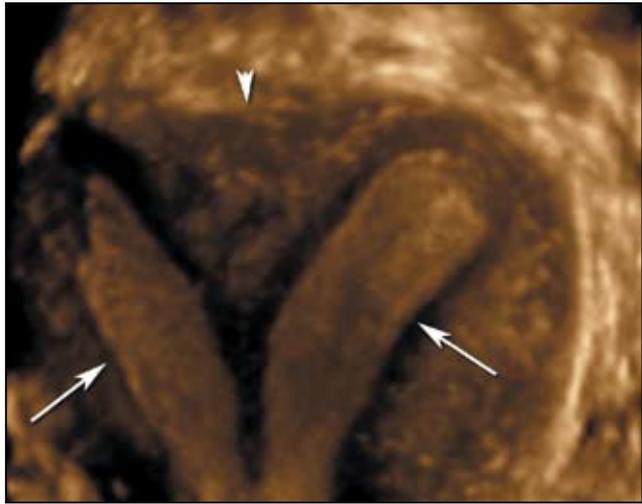


Figure 3.

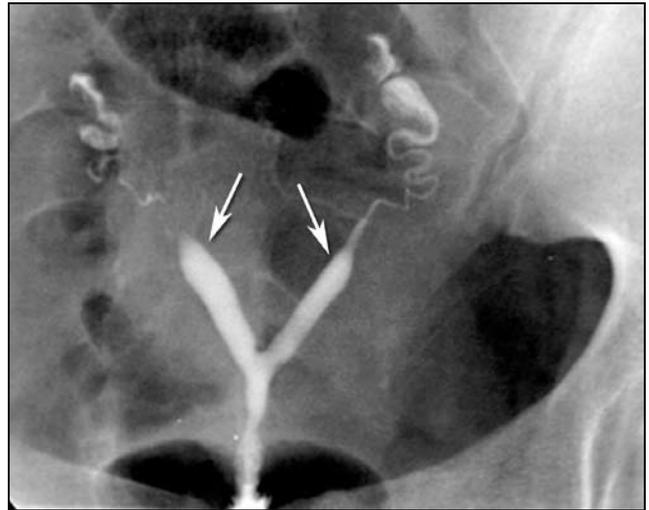


Figure 4.

MRI is the most sensitive, specific, and least invasive imaging test to definitively characterize uterine congenital anomalies.⁴ Additional imaging studies are available, and include 3D US, HSG, and sonohysterography. Renal anomalies can be associated with uterine anomalies, and evaluation of the kidneys should be standard in the imaging work-up of such anomalies.

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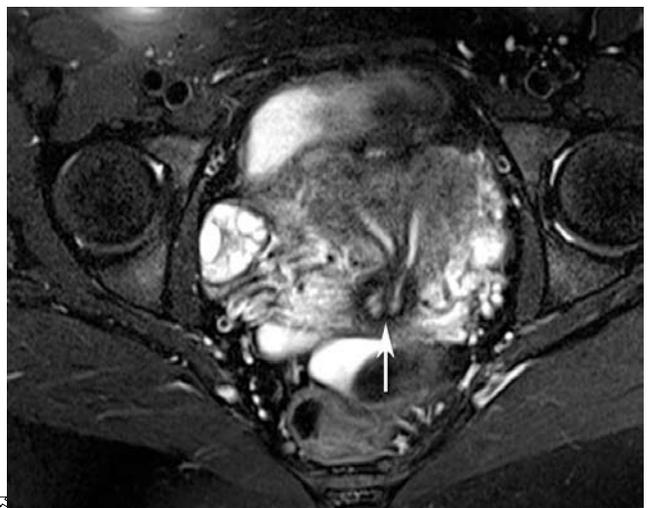
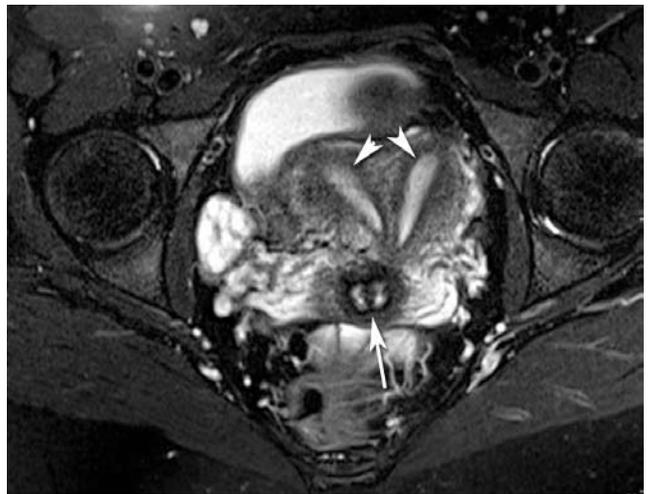
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Disclosure of Financial Interests

The authors and/or their spouses/significant others have no financial interests to disclose.

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Figures 5a and b.