

STOP relying on 2D ultrasound for IUD localization

START using more accurate 3D ultrasound instead

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Several decades ago, the negative publicity associated with the Dalkon Shield brand of intrauterine device (IUD) caused a decline in the use of this form of long-acting reversible contraception (LARC). However, there has been a resurgence in the use of IUDs in

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the past few years;¹ the current opinion of the American College of Obstetricians and Gynecologists encourages first-line use of LARC, and the IUD is popular with patients.²

Some patients with IUDs will experience more painful periods, intramenstrual cramps or bleeding, or heavier menses. Until recently, many clinicians (including us) believed these possible adverse effects were not unexpected and often warned patients that it was not abnormal if one or more of these occurred.

More recently, however, results of an important study showed that patients with part of their IUD not totally located within the endometrial cavity (eg, protruded into the cervix or partially piercing the myometrium) had an increased rate of pain and bleeding.³ Of patients with any abnormally located part of their IUD, 36% had abnormal bleeding and 39% had pain, compared with 15% of women

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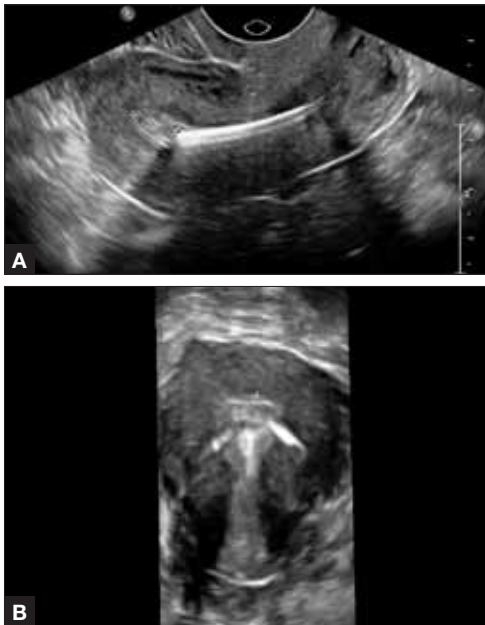
Thought-to-be central positioning is not found on 3D imaging

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FIGURE 1 3D imaging reveals embedded IUD



A 32-year-old para G1P1, with history of IUD placement for 1.5 years, reports irregular uterine bleeding. **A.** 2D long-axis transvaginal ultrasound shows the IUD to be centrally located, although the calipers do depict 9 mm from the top of the IUD to the end of the uterine cavity. **B.** 3D coronal ultrasound reveals that not only is the IUD low in the uterine cavity, as appreciated on 2D ultrasound, but both arms have also pierced beyond the endometrial cavity and partially into the myometrium.

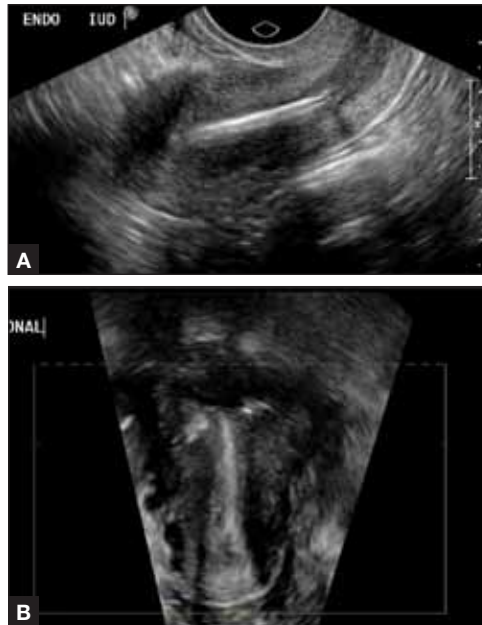
who reported abnormal bleeding and 19% who reported pain when their IUD was totally positioned within the endometrial cavity ($P = .02$ and $.03$, respectively).

A 3D ultrasound can reveal malpositioning not identified on 2D

Prior to the widespread availability of ultrasonography, some practitioners will remember placing a sound in the uterus taped to a tenaculum and obtaining a flat plate and cross table lateral abdominal x-ray to ensure an IUD was indeed “intrauterine.” With the advent of transvaginal ultrasonography, a long-axis view with a centrally located IUD was thought to definitively locate the device as intrauterine (FIGURES 1A, 2A, AND 3A, page 44).

Now, with the advent of 3D transvaginal

FIGURE 2 3D view shows misaligned IUD arms



A 28-year-old nulliparous patient, who previously used oral contraceptives but because of hypertension had an IUD placed 3 years ago, has been reporting left lower quadrant pain for 1 year. **A.** 2D long-axis transvaginal ultrasound view shows the IUD to appear perfectly located centrally within the endometrial cavity, going from endocervix to fundus. **B.** However, 3D coronal reconstructive view reveals the IUD arms are misaligned; the right arm extends 3 mm into the myometrium while the left arm extends into the cornua.

ultrasonography and the ability to construct a coronal plane, some IUDs, which appear to be totally normal on 2D sonography, actually show an arm that pierces the myometrium or protrudes into the cervix (FIGURES 1B, 2B, AND 3B, page 44). This in fact is probably the location that must exist at insertion for so-called “migration” to occur through the myometrium as uterine contractions, especially with menses, occur.

So the next time a patient with an IUD reports pain or bleeding, STOP doing only 2D ultrasound and START obtaining a 3D coronal reconstructive view. 📍

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Some IUDs that appear to be normal on 2D sonography are found to be piercing the myometrium or protruding into the cervix when 3D ultrasound is used



FIGURE 3 Thought-to-be central positioning is not found on 3D imaging



A 43-year-old para G1P2 reports intermittent pelvic pain. **A.** 2D long-axis transvaginal pelvic sonogram depicts a centrally located Mirena IUD. **B.** 3D coronal view depicts the IUD arms extending bilaterally into the myometrium 3 mm on the patient's right side and 4 mm on the left side.



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