

# Intrauterine Device Migration

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A 33-year-old woman with a 2-year history of rectal bleeding presented following a recent episode that was accompanied by weakness.

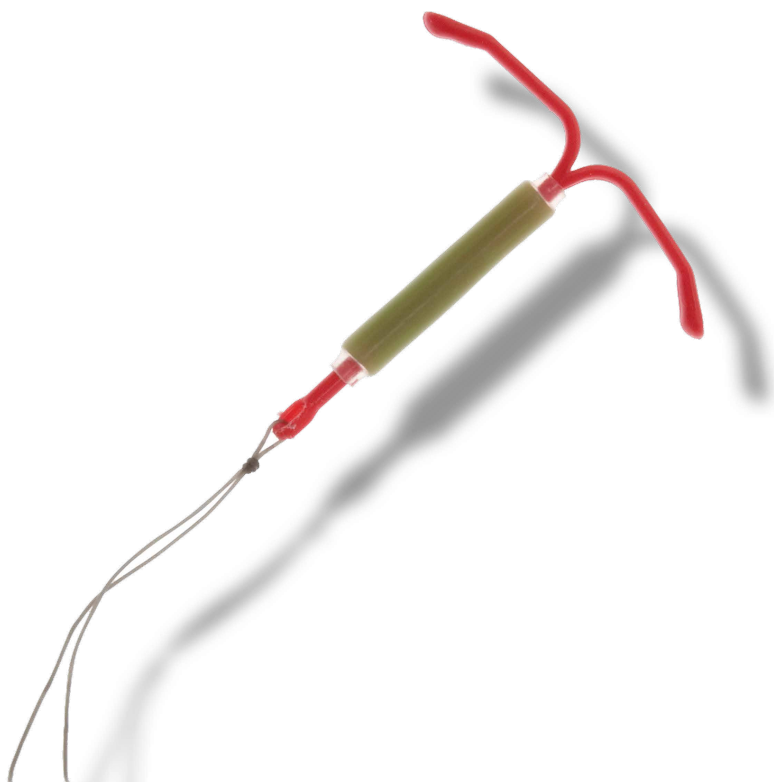
Although intrauterine devices (IUDs) are a mainstay of reversible contraception, they do carry the risk of complications, including septic abortion, abscess formation, ectopic pregnancy, bleeding, and uterine perforation.<sup>1</sup> Although perforation is a relatively rare complication, occurring in 0.3 to 2.6 per 1,000 insertions for levonorgestrel-releasing intrauterine systems and 0.3 to 2.2 per 1,000 insertions for copper IUDs, it can lead to serious complications, including IUD migration to various sites.<sup>2</sup> Most patients with uterine perforation and IUD migration present with abdominal pain and bleeding; however, 30% of patients are asymptomatic.<sup>3</sup>

This article presents the case of a young woman who was diagnosed with IUD migration into the abdominal cavity. I discuss the management of this uncommon complication, and stress the importance of adequate education for both patients and health care providers regarding proper surveillance.

## Case

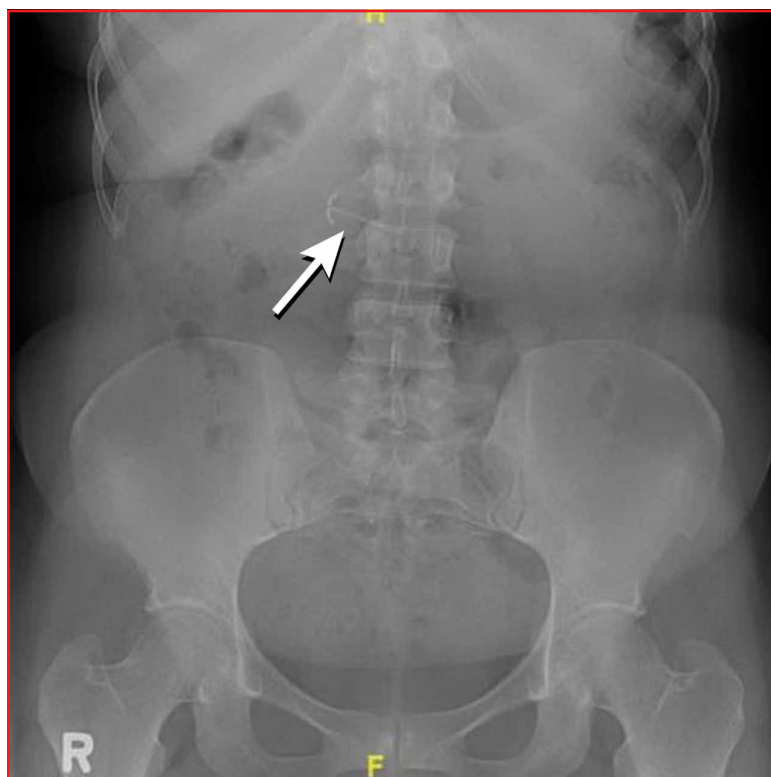
A 33-year-old woman (gravida 4, para 4, live 4) presented to our ED for evaluation of rectal bleeding that she had experienced intermittently over the past 2 years. She reported that the first occurrence had been 2 years ago, starting a few weeks after she had a cesarean delivery. The patient described the initial episode as bright red

blood mixed with stool. She stated that subsequent episodes had been intermittent, felt as if she were “passing rocks” through her abdomen and rectum, and were accompanied by streaks of blood covering her stool. The day before the patient presented to the ED, she had experienced a second episode of a large bowel movement mixed with blood and accompanied by weakness, which prompted her to seek treatment.



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**Figure 1.** Abdominal X-ray imaging reveals a nonobstructive stool pattern and a foreign body, likely in the abdominal cavity, which appears to be an intrauterine device (white arrow).

A review of the patient’s symptoms revealed abdominal pain and weakness. She denied any bleeding disorders, fever, chills, sick contacts, anal trauma, presyncope, syncope, nausea, vomiting, diarrhea, or constipation. She further denied any prescription-medication use, illicit drug use, or smoking, but admitted to occasional alcohol use. Her last menstrual period had been 3 weeks prior to presentation. She denied any history of cancer or abnormal Pap smears. Her gynecologic history was significant for chlamydia and trichomoniasis, for which she had been treated. The patient’s surgical history was pertinent for umbilical hernia repair with surgical mesh.

On physical examination, the patient was mildly hypotensive (blood pressure, 97/78 mm Hg) but had a normal heart rate. She had mild conjunctival pallor. The ab-

dominal examination exhibited normoactive bowel sounds with diffuse lower abdominal tenderness to deep palpation, but without rebound, guarding, or distension. Rectal examination revealed a small internal hemorrhoid at the 6 o’clock position (no active bleeding) and an external hemorrhoid with some tenderness to palpation; the external hemorrhoid was not thrombosed, had no signs of infection, and was the same color as the surrounding skin.

A fecal occult blood screen was negative, and a serum pregnancy test was also negative. Complete blood count, basic metabolic profile, and urinalysis were all unremarkable and within normal ranges. Abdominal X-ray revealed a nonobstructive stool pattern and a foreign body, likely in the abdominal cavity, which appeared to be an IUD (**Figure 1**). Computed tomography (CT) scans of the abdomen and pelvis without contrast were performed to accurately locate the foreign body and to assess for any complications. The CT scans revealed an IUD outside of the uterus, between loops of the transverse colon within the left midabdomen (**Figure 2**). There were no signs of infection, fluid, or free air. There were also findings of colonic diverticula and narrowed lumen, which were suggestive of diverticulosis.

The patient stated that the IUD had been placed several months after the vaginal birth of her third child. She continued to have normal menstrual periods with the IUD in place. Seven years later, she became pregnant with her fourth child, who was delivered via cesarean, secondary to fetal malpositioning. The IUD was not removed during the cesarean delivery.

Based on the CT scan findings, gynecology services was consulted, and the gynecologist recommended immediate follow-up in a gynecology clinic. The patient was discharged on a bowel regimen. She was assessed in a gynecology clinic 4 days later, where she was found to have a mobile retroverted uterus without tenderness or signs of infection. She underwent explor-

atory laparoscopy, during which the IUD was removed from the omentum in the left upper abdomen without complications.

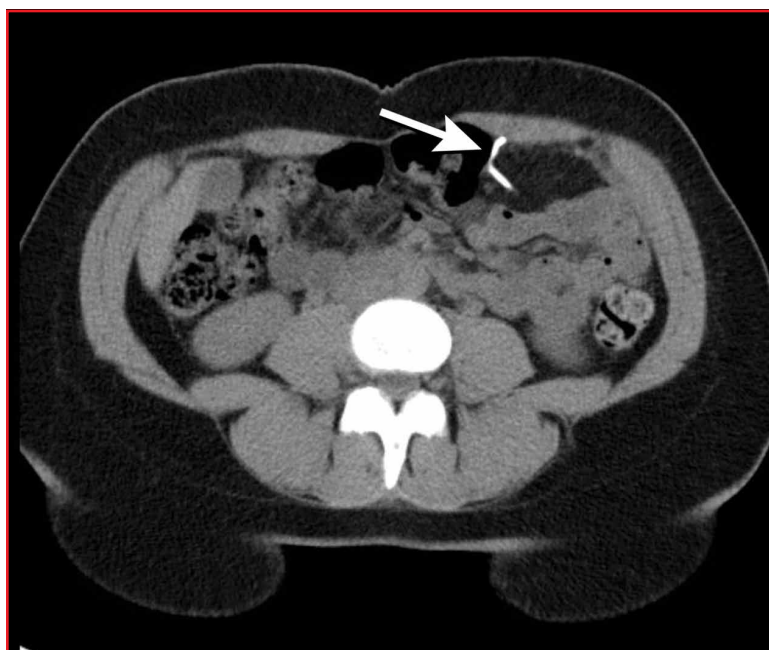
## Discussion

The IUD has had great acceptance among women since the 1960s. According to the World Health Organization, approximately 14.3% of women used an IUD in 2009.<sup>4</sup> Although complications are rare, the most serious are perforation of the uterus and migration of the IUD into adjacent organs.<sup>1</sup>

Risk factors of uterine perforation include clinician inexperience in IUD placement, an immobile uterus, a retroverted uterus, and the presence of a myometrial defect.<sup>4</sup> Heinemann et al<sup>2</sup> also suggested that breastfeeding and IUD placement soon after a delivery ( $\leq 36$  weeks) are independent risk factors, and the presence of both factors has an additive increase in risk of perforation.

Primary rupture of the uterus has been reported at the time of IUD insertion, but secondary or delayed rupture is more common and seems to be due to the spasms of the uterus.<sup>5</sup> Although 85% of perforations do not affect other organs, the remaining 15% lead to complications in the adjacent visceral organs.<sup>6</sup> The most frequent sites of migration are to the omentum (26.7%), pouch of Douglas (21.5%), large bowel (10.4%), myometrium (7.4%), broad ligament (6.7%), abdominal cavity (5.2%), adhesion to ileal loop serosa (4.4%) or large bowel serosa (3.7%), and mesentery (3%).<sup>7</sup> Rare sites are to the appendix, abdominal wall, ovary, and bladder.<sup>7</sup>

Intrauterine device migration should be suspected in patients who become pregnant after IUD placement (as was the case for our patient), when the “threads” or string cannot be located while attempting to remove an IUD, or when a patient has an “expulsed” IUD without observation of the device thereafter. Even though expulsion of the device happens in approximately 8 per 1,000 insertions, uterine perforation is also a possibility in the case of a “lost” IUD.<sup>8</sup>



**Figure 2.** Computed tomography scan reveals an intrauterine device outside of the uterus, between loops of the transverse colon within the left midabdomen (white arrow).

When a lost IUD is suspected, a pelvic examination should be performed to assess for threads or string location. If unsuccessful, ultrasound or plain abdominal radiographic imaging may be used to locate the IUD. Once IUD migration has been confirmed, cross-sectional imaging such as CT scans or magnetic resonance imaging (MRI) is suggested to rule out adjacent organ involvement before considering surgical removal.<sup>4</sup> If colonic involvement is suspected, colonoscopy can be used to confirm the diagnosis before operative removal.<sup>4</sup>

Although management of a migrated IUD in an asymptomatic patient is controversial, there appears to be a consensus that all extrauterine devices should be removed unless the patient’s surgical risk is excessive.<sup>1,5,9</sup> Retrieval of an IUD can be performed by laparotomy or laparoscopy.<sup>10,11</sup>

To avoid these complications and interventions, IUDs should be inserted by an appropriately trained professional, after proper patient selection. These devices should be monitored by periodic examina-

tions, either by medical professionals or by well-informed patients. This can be done by either checking for the threads or string in the cervical opening or by ultrasound imaging to confirm the location of the IUD.

## Conclusion

Although many patients with uterine perforation and IUD migration present with symptoms, approximately 30% are asymptomatic.<sup>3</sup> If a patient has a lost IUD and the threads or string is not visible during pelvic examination, appropriate work-up, including transvaginal or transabdominal ultrasound or radiographs, should be obtained to confirm the position of the IUD. If IUD migration is suspected, cross-sectional imaging, such as CT scans or MRI, is recommended to rule out adjacent organ involvement before considering surgical removal.<sup>4</sup>

Even though only 15% of migrated IUDs lead to complications in the adjacent visceral organs,<sup>6</sup> surgical removal of the IUD is advised regardless of the presence of symptoms or identified complications. Importantly, to prevent the delayed diagnosis and morbidity of IUD migration, patients with IUDs should be educated about the possibility of migration and the importance of regular self-examination for missing threads or string.

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