

## Unintended Journeys: Intrauterine Contraceptive Device Migration to The Sigmoid Colon and Right Ovary – A Report of Two Cases

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### ABSTRACT

Ectopic migration of intrauterine contraceptive devices (IUCDs) to neighboring organs is infrequent but can lead to severe consequences. This article presents two cases of IUCD migration resulting in serious consequences, including sigmoid colon penetration in the first case (25-year-old) and right ovary penetration and contraceptive failure leading to pregnancy in the second case (19-year-old). The IUCD was inserted 6 months ago and 2 years ago in the first and the second cases, respectively. Both cases underwent surgical exploration and IUCD removal. Fortunately, both patients experienced uneventful recoveries without any complications. In conclusion, although uncommon, IUCD ectopic migration may result in contraceptive failure and/or organ perforation. Thorough evaluation during care visits is necessary for proper IUCD placement, and radiological assessment should be performed in cases of "missed IUCD" even if the patient is asymptomatic. Timely removal of ectopic IUCD is strongly advised to minimize potential risks.

**Keywords:** Case Report, Intrauterine Contraceptive Device, Ectopic Migrations, Sigmoid Colon, Adnexal Organs

### Introduction

Intrauterine contraceptive devices (IUCDs) are prominently regarded as among the most extensively employed contraceptive methods owing to their remarkable tolerance, enduring efficacy, and capacity for reversibility (Rowlands *et al.*, 2016). Nevertheless, IUCD uterine or cervix penetration with subsequent ectopic migration into the neighboring reproductive, gastrointestinal, or genitourinary structures can be a seriously devastating complication (Rowlands *et al.*, 2016; Cheung *et al.*, 2018). The exciting feature of this clinical entity lies in its rarity, which manifests with elusive and nonspecific symptoms, often mimicking

other medical conditions (Cheung *et al.*, 2018; Aminu *et al.*, 2018). Fortunately, most gastrointestinal IUCD penetrations tend to be uncomplicated, with the IUCD staying dormant within the intraperitoneal cavity, while organ perforation and/or damage are infrequently observed (Rowlands *et al.*, 2016).

Literature about ectopic IUCD transmigration leading to sigmoid or ovarian perforations with pregnancy is scant, with only a limited number of published papers (Cheung *et al.*, 2018; Aminu *et al.*, 2018; Mederos *et al.*, 2008). Here, we present two cases involving ectopic IUCD migration and organ perforations of the sigmoid segment in the first case and ovarian perforation with contraceptive failure leading to pregnancy in the second case.

## Case Presentation

### Case One

A 25-year-old mother of two had an IUCD insertion two months ago, experiencing mild abdominal pain and minimal vaginal bleeding. She had no vomiting, hematochezia, or other gastrointestinal symptoms. She had a previous cesarean section and an IUCD implantation six months following delivery. The patient had no significant medical, familial, or social history. The patient was clinically stable. On examination, mild left lower quadrant tenderness was noted, and the IUCD could not be appreciated on vaginal examination.

Laboratory analysis revealed mild leukocytosis, with a white blood cell count (WBC) of  $12 \times 10^9/L$ , and mild anemia, indicated by a hemoglobin (HB) level of 11.2 gm/dL. The patient's pregnancy test yielded negative results, and other laboratory tests were unremarkable. Abdominal ultrasound (US) displayed an empty uterine cavity, with abnormal echogenicity observed in the intrabdominal cavity. Subsequently, a plain abdominal X-ray recognized the IUCD in the intrabdominal region (Fig. 1).



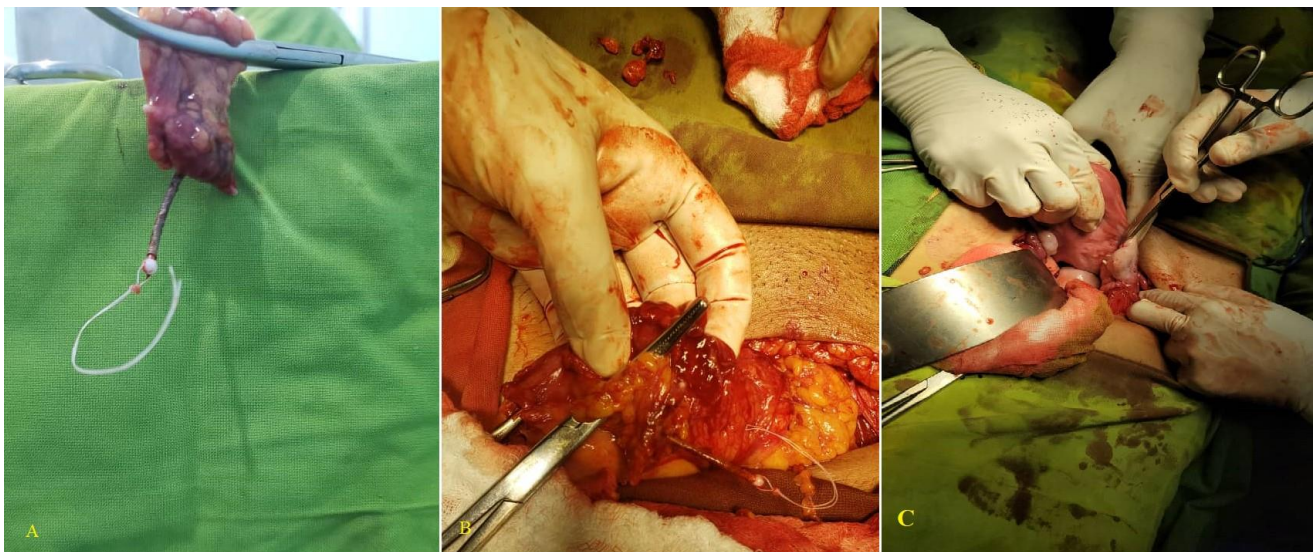
**Figure 1:** A radiograph depicting the intrauterine contraceptive device located in the pelvic region (arrow).

### Case Two

A 19-year-old mother with two children reported abdominal pain for 17 months. Despite no regular follow-up, she experienced abdominal distention, a positive pregnancy test, and normal fetal ultrasound. The patient had no significant medical, familial, or social history. The patient was clinically stable. On examination, mild right lower quadrant tenderness was noted, and the IUCD could not be appreciated on vaginal examination. Other than a positive pregnancy test, all other laboratory tests yielded unremarkable findings. The abdominal US displayed a normal intrauterine fetus, estimated to be at 8 weeks of gestation, and notably, no signs of an IUCD were observed within the uterine cavity. Considering the patient's informed decision to proceed with the pregnancy and the inability to visualize the IUCD threads, a strategy of careful monitoring with frequent US examinations was adopted. Two months later and after normal vaginal delivery, radiologic investigations showed that the IUCD was located on the right lower pelvic region.

#### *Therapeutic Interventions in Both Cases:*

Both cases underwent surgical exploration and IUCD removal. The exploration in the first case showed notable findings including adhesions formed between the uterus, left adnexa, and sigmoid colon, with the head of the IUCD fully penetrating the sigmoid wall. In the second case, exploration revealed complete migration of the IUCD through the round ligament of the uterus, with adherence to the right ovary wall (Fig. 2).



**Figure 2:** The intraoperative photograph displays the IUCD device between the ovary and round ligament (A), IUCD safely removed (B), and IUCD location (C).

### *Follow-Up and Outcome in Both Cases:*

The postoperative course proceeded uneventfully, with the patients resuming oral liquids after 12 hours and transitioning to a soft diet after 24 hours. By the 2nd postoperative day, the patient was on a regular diet. On the 3rd postoperative day, the patient was discharged home. The patients opted for a different form of birth control, and the use of oral contraceptive pills began. Within a 12-month follow-up period, both patients reported being free from any complaints.

### **Discussion**

The study reports rare IUCD ectopic migration complications, including sigmoid colon perforation and failed contraception due to ovarian penetration. Typically, IUCD migrates into surrounding structures such as the bladder wall, gastrointestinal tract, abdominal cavity, and retroperitoneum [1]. Uterine perforation may be evident at the time of IUCD inset with resultant pain and bleeding, as seen in the first case, or may occur later as a secondary event following pregnancy or subtle uterine contractions, as seen in the second case (Mederos *et al.*, 2008; Takahashi *et al.*, 2014). Sigmoid wall penetration was postulated to be a consequence of IUCD adhesion to the pericolonic fat, thereby triggering local inflammatory reactions with pressure necrosis that eventually lead to gastrointestinal perforation (Cheung *et al.*, 2018; Mederos *et al.*, 2008; Takahashi *et al.*, 2014). Regarding IUCD type, a study comparing copper-containing and levonorgestrel IUCDs found no significant differences in uterine perforation rates, despite their inflammatory properties (Heinemann *et al.*, 2015).

IUCD-related organ perforations can be partial or complete, with the first remaining within uterine walls and the last passing through all uterine layers and residing in the intraabdominal cavity (Rowlands *et al.*, 2016). In our first case, the IUCD perforated the sigmoid wall and partially perforated the ovary, leading to adhesion between the right ovary and the round ligament and pregnancy in the second case. The risk of uterine perforation and IUCD ectopic migration is influenced by factors such as uterine size, breastfeeding, postpartum insertion, inherent anomalies, inexperienced practitioners, and prior surgical interventions (Heinemann *et al.*, 2015). Because of characteristics such as uterine involution, severe contractions, and soft uterus consistency, postpartum insertion increases the risk of migration and intestinal wall perforation (Cheung *et al.*, 2018).

The period in which gastrointestinal perforations related to IUCD occur is typically around 1.5 years, but it can vary from 2 months to 13 years (Almatary *et al.*, 2023). Therefore, the first case in this study represents a short-documented interval of 2 months between IUCD implantation and proven sigmoid damage and an intermediate period of two years for the second case. Furthermore, the distinctive

complications observed in our second case (pregnancy) highlight subclinical issues that were likely exacerbated by prolonged medical neglect.

Migration of intrauterine contraceptive devices (IUCDs) can result in various complications, including but not limited to lower urinary tract symptoms, rare conditions like appendicitis, utero-vesical fistula, and hydronephrosis (Almatary *et al.*, 2023). The symptoms associated with intraperitoneal perforation related to IUCDs vary depending on the site of the perforation. Patients may remain asymptomatic for months or years, or they may present with abdominal discomfort or hemorrhage. In some cases, a triad of abdominal pain, fever, and diarrhea may manifest (Rowlands *et al.*, 2016). Generally, if intraperitoneal perforation occurs within a few months of insertion, the commonly reported symptom is lower abdomen discomfort, whereas individuals detected later are generally asymptomatic or have continuing abdominal discomfort (Goldstuck and Wildemeersch, 2014). In our first case, the primary symptom reported by the patient was acute lower abdominal pain. The second case had both chronic abdominal pain and contraception failure. A similar presentation was reported by Atileh, *et al.* (2019).

US, abdominal X-rays, CT scans, and magnetic resonance imaging are effective in assessing IUCD migration, with CT being the gold standard due to its precise site examination (Boortz *et al.*, 2012). In our cases, US and plain radiology diagnosed the IUCD migration and confirmed it intraoperatively.

Ectopic migrating IUCDs can be managed using various techniques such as laparoscopy, laparoscopy combined with hysteroscopy, colonoscopy, and open surgery (Alharbi *et al.*, 2022). The technique employed depends on the IUCD's location, equipment availability, presence of adhesions or bowel perforation, and the surgeon's experience (Almatary *et al.*, 2023; Alharbi *et al.*, 2022). Rahnemai-Azar, *et al.* successfully removed an IUCD from the small intestine using laparoscopic techniques, thanks to the surgeon's competence and wound protector retraction device (Rahnemai-Azar *et al.*, 2014). However, adhesions and intestinal perforation necessitate laparotomy conversion have been mentioned by several authors (Alharbi *et al.*, 2022; Gill *et al.*, 2012). In the cases presented here, an open surgical approach was employed due to the unavailability of laparoscopic equipment.

The report emphasizes the importance of patients understanding their IUCD, especially in light of global mobility and the variety of available IUCDs. It encourages patients to keep records of IUCD type, insertion and expiration dates, and warning signs of IUCD displacements. Regular monitoring is also crucial.



## Conclusion

Ectopic IUCD migration is rare but can cause contraceptive failure and organ perforation. Patients should undergo thorough evaluations for proper placement and radiological assessment for "missed IUCD." Timely removal of translocated IUCDs is recommended, guided by existing equipment and healthcare professional expertise.

**Patient's Perspective:** Both patients were happy with the surgical outcome.

**Informed Consent:** A written consent was provided by both patients for case publication including a photo.

**Competing Interests:** The authors declare no competing interests.

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