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Intraluminal Appendiceal Migration of an Intrauterine Device Without Appendicitis: A Case Report

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Data Interpretation D
Manuscript Preparation E
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Patient: Female, 37-year-old
Final Diagnosis: Migrated intrauterine device (IUD)
Symptoms: Abdominal pain
Clinical Procedure: —
Specialty: Obstetrics and Gynecology • Surgery

Objective: Unusual clinical course

Background: The intrauterine device (IUD) is a commonly used contraceptive method in emerging countries, such as Mexico and several Latin American nations. IUD insertion is a well-described and relatively simple procedure; however, one of its rare complications is migration to nearby extrauterine structures.

Case Report: The patient was a 37-year-old woman with a history of cesarean delivery 5 years earlier. After an abortion managed by instrumental uterine curettage in 2024, a copper intrauterine device (IUD) was placed, with no immediate complications. However, 1 month later, she experienced intermittent mild cramping in the lower abdomen, which intensified 1 year later (2025) and for which she sought medical evaluation. The initial examination included a pelvic ultrasound, which revealed the absence of the IUD within the uterine cavity. After a hysteroscopy and computed tomography (CT), the gynecology and obstetrics department performed an exploratory laparotomy. The transoperative findings were as follows: right iliac fossa with displaced IUD, whose arms were located in the right fimbria, while the body of the device was apparently visible within the appendicular lumen. The cecal appendix showed no macroscopic evidence of pathology. The patient's progress was satisfactory, with no immediate or delayed complications.

Conclusions: This case is the first record in the medical and scientific literature in which the IUD was found intraluminally in the appendix, without macroscopic or clinical data of acute appendicitis. This case also highlights the need for early diagnosis and timely treatment of seemingly rare conditions, to reduce complications arising from procedures considered routine, such as IUD insertion.

Keywords: Appendix • Intrauterine Device Migration • Intrauterine Devices, Copper

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Introduction

The vermiform appendix is a vestigial structure of the primitive intestine with recognized immunological functions and is of clinical relevance in daily surgical practice. Acute appendicitis is a leading cause of acute abdomen requiring emergency department care. Pathologies of this vestigial organ cover a wide spectrum, from common inflammation to extremely rare entities, such as appendicular (benign or malignant) tumors, which account for up to 0.5% of all gastrointestinal tract tumors, as reported in recent meta-analyses [1].

The intrauterine device (IUD) is a commonly used contraceptive method in emerging countries, such as Mexico and several Latin American nations, and in developed countries. Organizations such as the American College of Obstetricians and Gynecologists and the World Health Organization widely recommend its use [2]. IUD insertion is a well-described and relatively simple procedure; however, one of its rare complications is migration to nearby extrauterine structures.

In 2021, Tabatabaei and Masoumzadeh highlighted that uterine perforation is one of the most significant complications associated with IUD insertion, typically occurring at the time of insertion. In their case series, they described devices that presented delayed migration to organs such as the sigmoid colon, rectum, and even the appendix [3,4].

Migration of the IUD to the vermiform appendix has been rarely reported. In 2016, Uysal et al reported a case of an IUD embedded in an inflamed enlarged appendix with abnormal uterine bleeding as the main manifestation [5,6]. It is worth emphasizing that when the IUD cannot be located within the uterine cavity for any reason, additional tests, such as abdominal X-ray, ultrasound, or even computed tomography (CT), should be performed to identify its location.

More recently, in 2024, Sebai et al reported the case of a 33-year-old woman whose IUD, inserted 16 months earlier, was lodged in the appendix. In this case, chronic pelvic pain predominated without any other evident symptoms [7].

The clinical presentation of a migrated IUD varies: it can be asymptomatic or manifest as acute abdominal pain. Symptoms can involve different systems, including gynecological, urinary, or digestive, and range from a stable clinical condition for years to serious situations, such as visceral perforations, septic shock, or even life-threatening conditions [8-11].

With the exception of these reports, no recent studies have been published in the past 5 years documenting the migration of an IUD into the appendix, nor any describing its direct discovery within the lumen of the appendix during surgery. It is in this context that the case we are about to describe takes on particular significance.

Case Report

We present the case of a 37-year-old woman, with a history of cesarean delivery 5 years prior to presentation, preceded by cervical cerclage due to short cervix. She underwent cervical conization for high-grade squamous intraepithelial lesion and had 2 abortions, both managed by instrumental uterine curettage without apparent complications. In the last obstetric event, a copper IUD was placed with no immediate complications reported.

One month after the IUD was inserted, the patient reported intermittent mild cramping in the lower abdomen. The pain was exacerbated by the onset of the menstrual cycle, physical activity, defecation, and urination, with partial improvement with the intake of unspecified analgesics.

One year later, the patient experienced increased pain intensity (6/10) and sought medical evaluation; she showed no symptoms of acute appendicitis or acute abdomen, with only abdominal tenderness upon deep palpation in the hypogastrium and right iliac fossa. The initial examination included a pelvic ultrasound, which incidentally revealed the absence of the IUD within the uterine cavity, with a suggestive image of an extrauterine heterotopic IUD in the right region.

Given this imaging finding, she was referred to the gynecology and obstetrics department, where a diagnostic hysteroscopy was performed, revealing an empty uterine cavity and the following findings: elastic vagina without alterations, patent external and internal cervical os, endocervical canal with glands without alterations, and triangular uterine cavity with visibility of both ostia (**Figure 1A, 1B**). At the level of the uterine fundus near the right ostium, a well-circumscribed circular image was visualized, probably suggestive of a healed perforation site (**Figure 1C**). As a complementary study, a computed tomography (CT) scan was performed (**Figure 2**), which showed an extrauterine abdominal implant in the right pelvic cavity.

Based on the laboratory test results, persistence of symptoms, and the consideration of potential complications described in the literature regarding displaced IUDs, such as perforation or rupture of adjacent structures, and given the patient's stable condition and the absence of acute appendicitis, the department of obstetrics and gynecology scheduled an exploratory laparotomy. This procedure was chosen because the hospital

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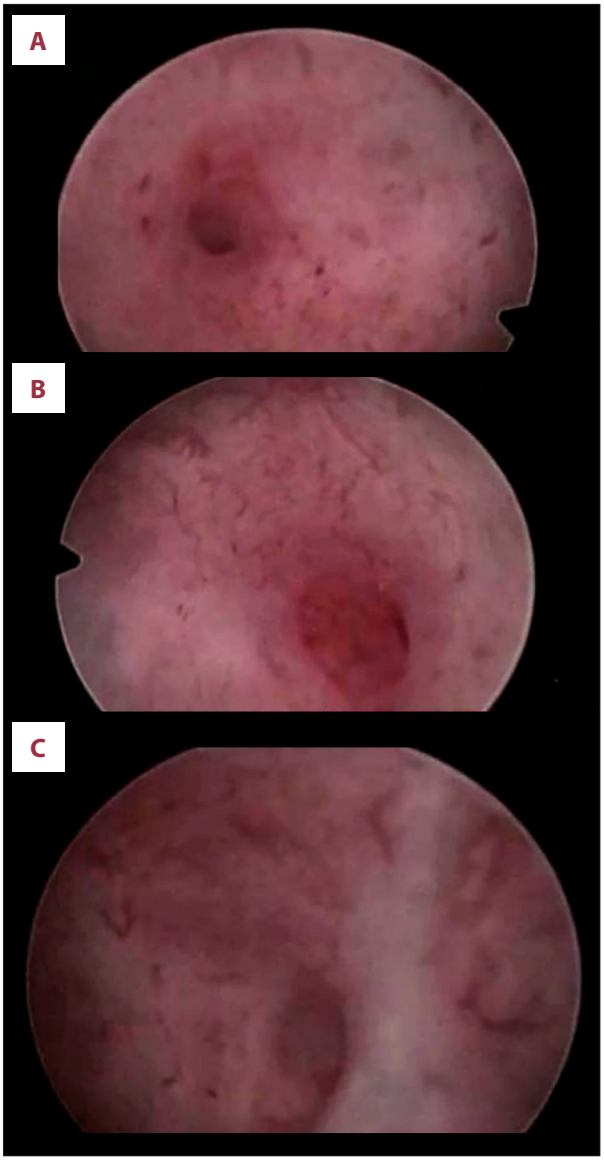

Figure 1. Hysteroscopy. The left ostium (**A**) and right ostium (**B**) are visualized. At the level of the uterine fundus near the right ostium, a well-circumscribed circular image is visible, likely suggestive of a healed perforation site (**C**).

did not have the necessary equipment to perform a minimally invasive procedure, such as a laparoscopy.

The intraoperative findings revealed a uterus measuring 5×4×4 cm. Initially, the presurgical management was addressed only by the gynecology and obstetrics specialty based on the findings and paraclinical reports that did not suggest compromise of the gastrointestinal tract. Once the surgical team was in the cavity and observed the intestinal involvement of the IUD migration, the general surgery department was consulted intraoperatively.

The findings were as follows: left ovary measuring 4×2 cm; right iliac fossa with a displaced IUD, whose branches were located on the right fimbria, while the body of the device was apparently found within the appendiceal lumen, which was located in the pelvic region, with the base preserved. The mesoappendix appeared macroscopically normal. The cecal appendix showed no macroscopic findings suggestive of pathology (**Figure 3A**). The right ovary measured 3×2 cm, with no apparent abnormalities and no free fluid.

An appendectomy was performed with Halsted-type stump management, removal of the dislocated IUD, and bilateral Kroener-type fimbriectomy. Once removed, the vermiform appendix was opened longitudinally, revealing the IUD body within its lumen (**Figure 3B**).

The patient was discharged 48 hours after surgery with mild abdominal pain at the surgical site. There were no signs of peritoneal irritation. She was tolerating a normal diet, ambulating, urinating, and having bowel movements. At a 2-week follow-up appointment, she reported the absence of abdominal pain and full resolution of previous symptoms. She had stable vital signs, and a well-healed surgical wound; therefore, the sutures were removed. She was seen again 1 month later, and had remained asymptomatic; therefore, she was then discharged from both services.

Discussion

IUD migration is a relatively rare condition; however, underestimating its diagnosis can lead to short-, medium-, and long-term complications. In the present case, the symptoms were insidious and not acute, and did not require emergency surgical management. Our case was similar to that of Carroll et al, who reported that complications can occur even decades after the placement of the device [12]. These complications can range from requiring routine management to life- or function-threatening scenarios, requiring complex surgical procedures such as intestinal resections [13].

Similar to what we reported in this case, Vidarsdottir et al describe an unusual migration site; however, unlike what we described, in their case, the IUD placed 22 years earlier lodged in the wall of the colon [14].

In the present case, various preoperative imaging studies were performed, ranging from the simplest (abdominal X-ray and ultrasound, with their well-known diagnostic limitations) [15] to more complex procedures, such as diagnostic hysteroscopy and CT, a guideline already reported in the literature in scenarios where IUD migration is suspected [5,16,17]. The radiological report from the ultrasound and CT scan did not suggest

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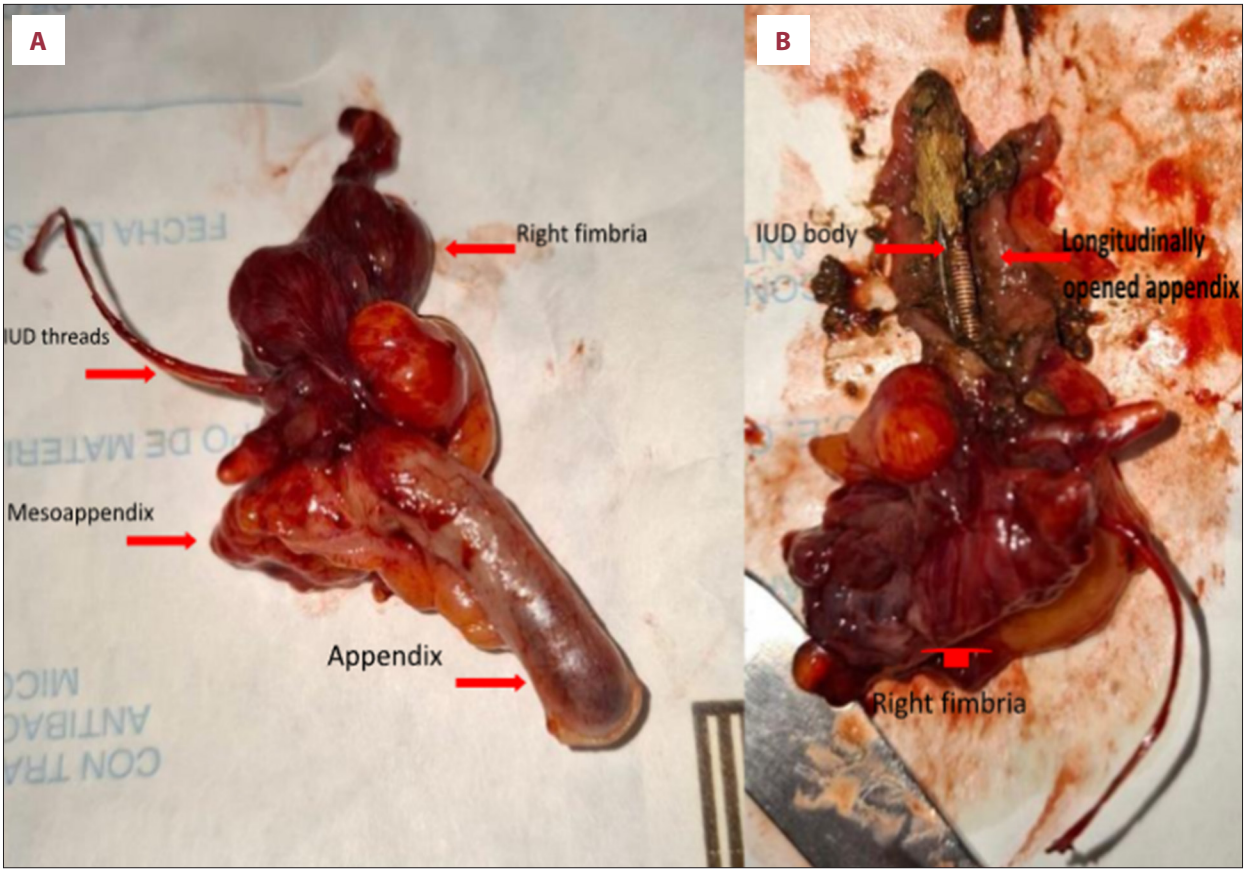

Figure 2. (**A**) Image shows the right fimbria, mesoappendix, and vermiform appendix. (**B**) Image shows the longitudinally opened cecal appendix ex vivo, highlighting the IUD body with fecal matter at its tip, as well as its relationship to the right fimbria.

that the IUD was related to the vermiform appendix at any level but reported only its migration within the pelvic cavity. The IUD›s location within the appendiceal lumen was an intraoperative finding. Based on the hysteroscopy findings, which revealed a single, well-defined scar in the uterine fundus, it is possible that the perforation occurred acutely at the time of the IUD insertion. A possible explanation is proposed a priori: the IUD, as a foreign body, could have eroded the layers of the appendix until reaching its lumen, followed by adherence of adjacent structures, probably the mesoappendix, fimbria, or omentum.

Given the limited literature on extrauterine migration of IUDs, it is difficult to explain the possible mechanisms that contributed to the IUD's migration into the abdominal cavity. Improper insertion leading to perforation of the uterine fundus could explain its displacement near the appendix, although mechanisms such as uterine contractions, peritoneal fluid circulation, intestinal peristalsis, the position of the uterine body (deviated to the left) and its corresponding uterine fundus (deviated to the right) at a right angle to the right iliac fossa (**Figure 2B**), as well as intra-abdominal pressure, could also have contributed to the device's displacement (**Figure 3C, 3D**).

Abdominal pain associated or unrelated to the menstrual cycle and the urinary symptoms described in this report coincide with the appropriate assessment and correct semiology in patients with a history of IUD use, as described by Aljohani [16]. Similar to the present case, Khan et al (July 2025) described a clinical case of a 22-year-old woman in which an IUD was reported as being found in the appendiceal lumen. However, the published images do not clearly support this finding, and the clinical description is ambiguous, initially referring to acute appendicitis and later stating that the patient remained asymptomatic. In our case, the patient did not present any clinical signs suggestive of exacerbation [18].

The migration of the IUD toward the lumen of the cecal appendix has not been reported in recent medical literature. This clinical case highlights the rarity of the surgical findings evidenced both in the imaging study and in the surgical specimen, where no macroscopic alterations in the anatomy of the appendix were observed.

This report has 2 objectives: to provide information on extremely rare surgical findings and to encourage studies with greater statistical power, such as case series or meta-analyses, to

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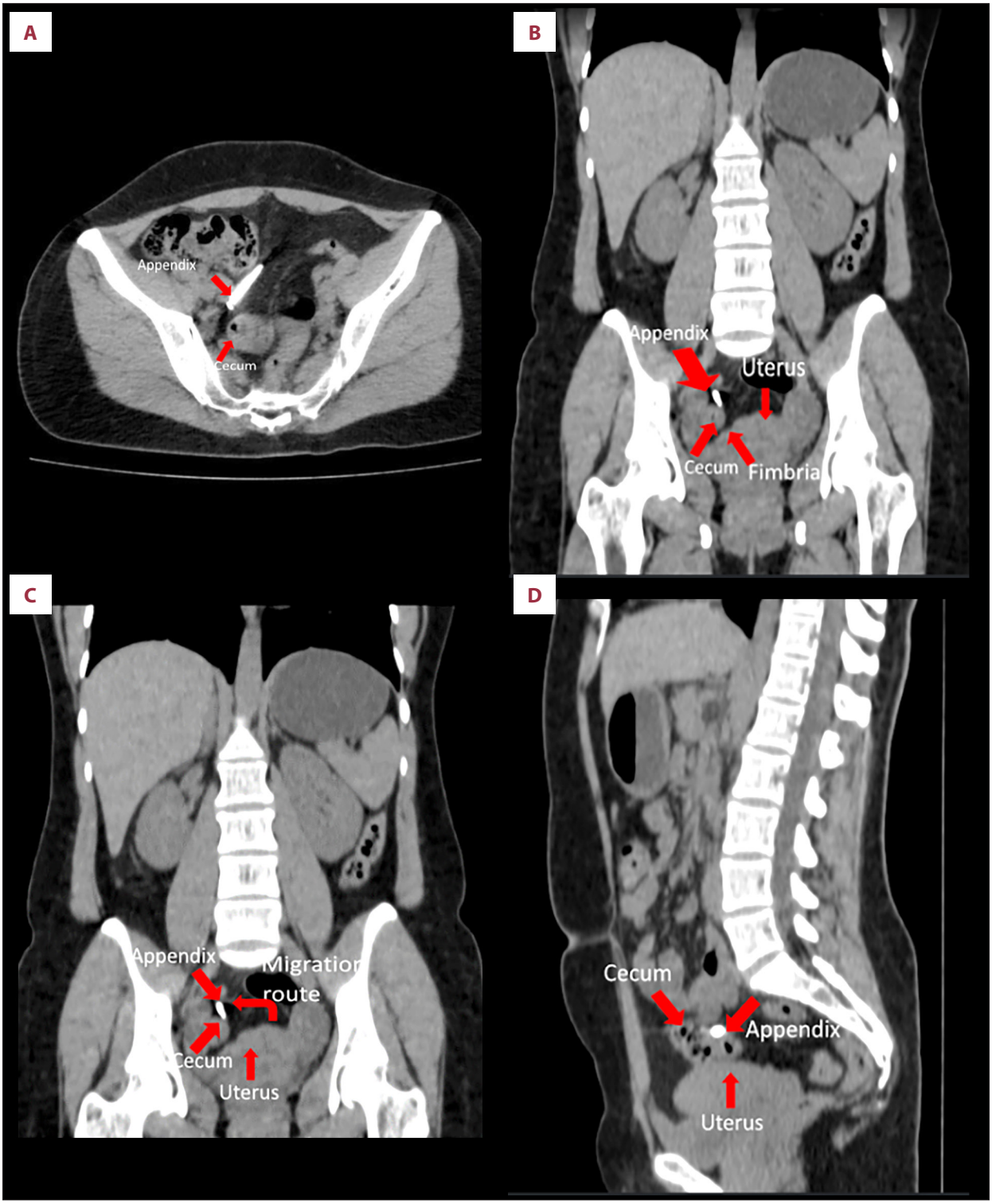

Figure 3. (**A**) Axial tomography scan at the level of the pelvic cavity showing a T-shaped hyperdense image suggestive of an intrauterine device (IUD) in the upper right region in relation to the uterine fundus, above the cecum, without free fluid observed. (**B**) Image shows the relationships of structures such as the uterine fundus, cecum, and appendix. A hyperdense image at the site of the appendix is highlighted, suggestive of a migrated IUD. In the same figure (**C**), an arrow illustrates the proposed migration route of the IUD to the right iliac fossa and ultimately to the appendiceal lumen. (**D**) Sagittal CT scan showing the relationship of the uterus to the cecum and appendix.

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enrich the current medical literature. It also emphasizes the relevance of considering IUD migration as a pathology of interest in surgical practice, both for general surgeons and gynecologists, in order to promote timely diagnosis, reduce complications, and establish appropriate treatment [19]. Finally, it is necessary to emphasize that there are a wide range of options for removing an IUD, depending on the location of the device and the surgical approach, including exploratory laparotomy, as in this case, to more conservative techniques such as laparoscopy, cystoscopy, endoscopy, or even robotic-assisted surgery [20-22].

In comparison with previously reported cases in the medical literature, the present case differs because the others describe a clinical presentation suggestive of acute appendicitis: acute abdominal pain, signs of peritoneal irritation, and surgical urgency. In the present case, there are no reported signs of an acute abdomen or clinical presentation suggesting surgical urgency. Furthermore, the findings reported so far regarding IUD migration to the appendix relate it to periappendiceal locations or embedding in some portion of the appendiceal wall. In our case, the entire body of the IUD was found within the appendiceal lumen.

Conclusions

After an exhaustive literature search and considering that the case reported by Khan (Pakistan, 2025) is described ambiguously, and its images do not show the reported findings, we can conclude that this case is the first clearly documented intraluminal appendicular location without macroscopic or clinical data of acute appendicitis [18]. IUD migration is a rare complication, and even more so in unusual locations such as that reported in this case, which poses a challenge to conventional medical explanation.

Reporting unusual surgical cases is important for building scientific evidence on rare conditions, although their apparent rarity may reflect underreporting in the literature rather than true infrequency. This case also highlights the need for early diagnosis and timely treatment of seemingly rare conditions, reducing complications arising from procedures considered routine, such as IUD insertion. Gynecologists are advised to anticipate and consider complex scenarios arising from routine procedures, and not to underestimate radiological findings that may require intervention by a general surgeon. Finally, it is essential to perform periodic evaluations of patients after IUD insertion: at 1 month, 6 months, and then annually until removal, or according to evidence-based follow-up guidelines.

Institution Where Work Was Done

Mexican Social Security Institute (IMSS), Hospital number 23. Metepec, Hidalgo, Mexico.

Patient Consent

The patient's authorization has been obtained through informed consent, and her confidentiality is also ensured.

Declaration of Figures' Authenticity

All figures submitted have been created by the authors who confirm that the images are original with no duplication and have not been previously published in whole or in part.

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