

Retroperitoneal Displacement of an Intrauterine Device (IUD): A Case Report.

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Abstract: Copper T intrauterine devices (IUDs) rank among the prevalent contraceptive options in developing nations, yet they carry risks of significant complications including hemorrhage, uterine perforation, and potential migration to nearby organs or the omentum. Although perforation of the uterus by an IUD happens rarely, occurrences of its migration into the retroperitoneal space are very seldom seen. Here, we report a case of Copper T intrauterine devices (IUDs) uterine perforation and subsequent identification within the retro peritoneum.

➤ Case Presentation:

A 26-year-old woman who had an IUD (Copper T) inserted for 2 years presented to our facility with transient abdominal pain lasting for 2 months. The IUD was placed 6 weeks after her vaginal delivery. Previously, she had attended a private hospital several times due to similar complaints, where she was treated with antibiotics and analgesics. However, for the past two weeks, her symptoms did not improve anymore, and she went to a private clinic for IUD removal and sought medical advice as well. A speculum examination was done, and no IUD strings were visible. A pelvic ultrasound was done, and an IUD was not seen in the uterus. Then she was referred to our hospital for expertise review & management as well. At our hospital, a plain abdominal-pelvic X-ray was done which showed a radio-opaque substance in the left lumbar region. An explorative laparotomy was performed, and the IUCD was found within the retroperitoneum, overlying the ureter and iliac vessels. After intact removal, the patient opted for a contraception with implants which was placed without complications.

➤ Conclusion:

In conclusion, migration of an intrauterine contraceptive device into the retroperitoneum represents a rare but potentially serious complication. It can cause a range of symptoms and complications, requiring prompt diagnosis and appropriate management. Prevention through proper insertion techniques and regular follow-up visits is crucial in minimizing the risk of migration.

Keywords: Retroperitoneal Migratory IUCD, diagnosis, explorative laparotomy

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I. INTRODUCTION

➤ Background

Intrauterine devices (IUDs) are widely used and safe methods of long-term family planning; their use among women worldwide ranges from 14% to 27% (1). While IUDs

are generally considered safe, there are potential complications that can occur during insertion or with prolonged use, with uterine perforation being a significant risk that happens in approximately 1.6 cases per 1000 insertions (2). It is often observed in the posterior wall of the uterus (3) and may frequently present without symptoms

(4). Following a perforation, the IUD may be found in several adjacent organs, including ectopic placements within the omentum, mesentery, pouch of Douglas, colon, bladder, and retroperitoneal space as reported in medical literature (5).

After a uterine perforation, patients may remain asymptomatic or experience symptoms such as abdominal pain, fever, vaginal bleeding, and potentially intermittent diarrhea if there is an injury to the bowel. While most perforations are believed to occur during the insertion procedure, reports indicate that nearly half of these cases went undetected for over a year following the insertion (2). Such instances could stem from incomplete penetrations in which the IUD merely breaches the lining of the uterus, leading to subsequent displacement as a result of contractions of the uterus (6).

Although there are various treatment methods available, surgical interventions like laparotomy and laparoscopy are often advised for managing abdominal IUDs. Laparotomy becomes essential when the device is embedded within internal organs or adhered to surrounding tissues. Recently, we encountered a patient whose IUD had perforated the uterus, leading to its discovery in the retro peritoneum overlying the iliac vessels and ureter and was treated by laparotomy.

➤ Case Presentation:

A 26-year-old Para 1 living 1, came to our specialized gynecological outpatient clinic with the complaint of transient recurrent lower abdominal pain for a period of 2

months. She had vaginal delivery two years ago and had a Copper T IUD placed six weeks after delivery without complications. She had been attended at a private hospital several times because of a similar complaint. During her attendance, she was treated with antibiotics and analgesics. However, for the past two weeks, her symptoms did not improve anymore and she went to a private clinic for IUD removal & sought medical advice as well. A speculum examination was done, and no IUD strings were visible. A pelvic ultrasound was done, and an IUD was not seen in the uterus. Then she was referred to our hospital for expertise review & management as well.

On abdominal examination, the abdomen was flat, soft, mild tender, and dull. Bowel sounds were normal and heard in the flanks. On pelvic examination (speculum and bimanual examination) she had normal external genitalia, uterine cervix, and fornices of the vagina. No IUCD string was seen per cervical os. Routine laboratory tests, such as a complete blood count, yielded normal results. A plain abdominal X-ray was conducted that revealed a radio-opaque substance in the left lumbar region (figure 1.) Based on the clinical examination, the routine laboratory findings, ultrasound results, and Pelvic X-ray a migratory IUCD was diagnosed.

An explorative laparotomy was performed, and the IUCD body was found within the retroperitoneum, overlying the ureter and iliac vessels and strings in the left iliac fossae (intra peritoneum). A careful dissection was done to release adhesions allowing for IUD removal and strings intact without damage to the bowel and retroperitoneal structures.

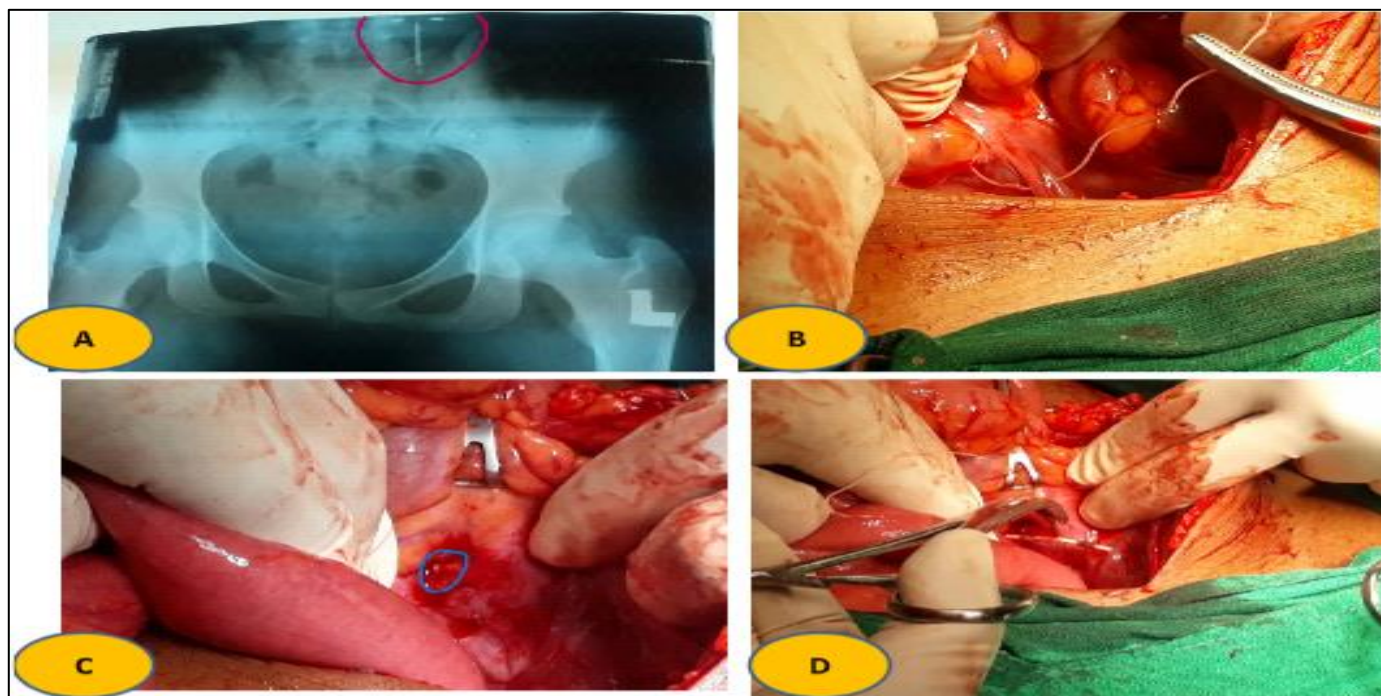


Fig 1 Image A-Plain Abdominal-Pelvic X-ray showing IUCD outside the uterus in the left lower quadrant (red circle). Image B-IUD strings seen in the area of minimal adhesions left adnexa & bowel. Image C-Body of IUD seen encased within retroperitoneum (blue circle) overlying iliac vessels. Image D-IUD removal and strings intact without damage to the bowel and retroperitoneal structures

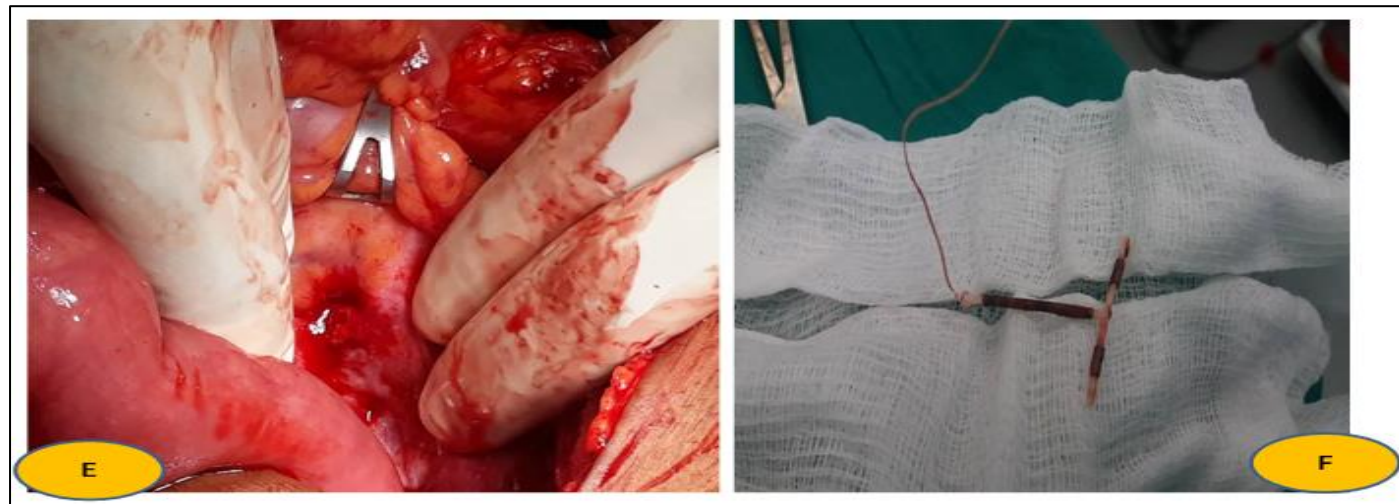


Fig 2 Images E and F Show IUD After Surgical Extraction and no Injury to Bowel and Retroperitoneal Structures (Right)

The patient experienced a smooth recovery following surgery and was discharged from the hospital three days after surgery. Two weeks post-surgery, the patient presented for the post-operative visit and was recovering well. She opted for contraception with implants, which were placed without complications. The patient provided written consent for publication of this case report.

II. DISCUSSIONS AND CONCLUSIONS

The Intrauterine devices (IUDs) are among the most reliable and enduring contraceptive methods utilized by women globally, with an annual pregnancy rate lower than 1%.(7). While generally considered very safe, there is a possibility of experiencing certain adverse effects, which can include infections, heavy menstrual bleeding, and in rare cases, improper placement resulting in uterine perforation (8).

Uterine perforation after the insertion of an IUD is uncommon, occurring in approximately 0.16% of instances (2). Perforation can occur in two forms: complete, when the IUD is located outside the uterine cavity, and partial, when a segment has penetrated the myometrium. The most frequently reported sites for ectopic localization following migration of the IUD include the omentum, mesentery, pouch of Douglas, colon, and bladder (5). Approximately 80% of displaced IUDs are located within the peritoneal cavity following uterine perforation (9) but in our case the IUCD body was found within the retroperitoneum, overlying the ureter and iliac vessels and strings in left iliac fossae (intra peritoneum).

Imaging studies play a crucial role in the evaluation of patients with a missing IUD thread. The means to locate an extra uterine IUD will be an ultrasound; if this method does not yield results, an abdominal X-ray will be performed to search for the device in the abdomen before determining a potential expulsion. In our case, the diagnosis was validated through abdominal X-ray, which facilitated our decision-making process.

In a well-equipped medical facility, the extraction of a misplaced migratory IUD is typically performed using laparoscopy, with success rates ranging from 44% to 100%,

(10) influenced by both the IUD's position and the operator's skill level. In this case, laparotomy was performed because of adhesion suspect and lack of minimally invasive methods like laparoscopy services and the patient cannot afford its cost in private hospitals. Based on our assessment of the patient's surgical background and the presence of minimally invasive surgical options, we advised performing a laparotomy. The World Health Organization suggests that even in asymptomatic individuals, immediate surgical intervention is necessary for migrated intrauterine devices (IUDs). Initially, techniques such as colonoscopy, cystoscopy, or laparoscopy may be employed depending on where the IUD has migrated; however, if it has become embedded in an organ like the colon or bladder, an exploratory laparotomy is preferred over other invasive procedures (11).

The presentation of IUD migration varies depending on both the location of migration and the specific type of IUD used as copper IUD is thought to cause more inflammatory response and lead to more adhesion formation in the abdomen than the levonorgestrel IUD. The majority of patients with migratory IUDs presented with abdominal pain, and they were healthy otherwise (12); in patients without symptoms, displaced IUDs may remain undetected for years (13). In the literature, most reported cases of IUD retroperitoneal migration were symptomatic at the time of diagnosis (12).

In patients who do not receive regular follow-up after IUD placement, migration may only be suspected when they experience abdominal pain or exhibit clinical signs such as fever, diarrhea, urinary tract infections, or even severe complications like peritonitis, sub-acute intestinal obstruction, or as strings at the anus (12). Despite this, the patient's recurrent pelvic pain and missing IUD strings during speculum examination could arguably have prompted ultrasound imaging to confirm the correct IUD placement. Here, it is possible that IUD perforation could have been diagnosed sooner if imaging had been performed early.

In this case, the IUD body was also found entirely encased in the retroperitoneum and strings in the left iliac fossae (peritoneum) at the time of laparotomy. It is unlikely that an IUD could be placed so laterally at the time of

insertion or that an IUD inserted directly in this location. The sequence of events suggests the IUD was placed correctly or partially perforated, with subsequent migration through the myometrial wall and then through the peritoneum into the retroperitoneum.

In conclusion, consistent counseling and follow-up regarding IUDs can significantly aid in the early identification of IUD migration; patients should be instructed on how to check for IUD strings, making this an essential component of IUD insertion clinics. Imaging studies play a crucial role in diagnosing and locating IUDs, as perforation due to retroperitoneal ectopic positioning is among the rarest and most severe complications. To prevent adverse effects and complications arising from IUD migration, laparoscopic or even laparotomic removal of the device is necessary.

DECLARATIONS

➤ *Ethics approval and consent to participate*

The patient provided written informed consent, and a record of this consent is maintained; permission to publish has been secured from the appropriate authorities

• *Consent for Publication*

Informed consent in writing (in Swahili language) was obtained from the patient for the publication of this case report and the associated images. A copy of the signed consent is available for review by the Editor-in-Chief of this journal.

• *Competing Interests*

The authors declare that they have no competing interests.

➤ *Authors' Contributions*

GSM, FCJ and EKK performed the operation and patient follow-up. SM-an anesthesiologist administered anesthesia during this operation, and patient follow-up, and wrote the manuscript. GSM and HK reviewed the literature and wrote the manuscript. GSM and MJM revised the manuscript critically for important intellectual content. All authors read and approved the final manuscript.

• *Abbreviations*

IUD-Intra uterine Device, CT-Scan-Computerized tomography, MD-Medical Doctor, MMED-Masters of Medicine, MRI-scan -Magnetic Resonance Imaging, PHD-Doctor of Philosophy.

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