Intrarectal Migration of an Intrauterine Device: A Case Study and Review of Literature

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Abstract

Intrauterine devices (IUDs) are a widely used and generally safe method of long-term contraception. However, complications such as uterine perforation and migration can occur, although they are rare. This article presents a case of a 30-year-old woman with a history of two pregnancies and deliveries, who had a copper IUD inserted two years prior during the lactation period. She was admitted with severe pelvic pain and constipation lasting for three days, without externalized gastrointestinal bleeding or vomiting. Clinical examination revealed generalized abdominal tenderness with hypogastric guarding, while laboratory tests indicated elevated inflammatory markers. Imaging studies, including abdominal ultrasound and CT scan, revealed the migration of the IUD and its partial perforation into the rectal ampulla. Emergency surgery was performed, including the repair of a rectal perforation, lateral protective colostomy, and appendectomy. The postoperative course was uneventful, and colonic continuity was restored six weeks later. This case underscores the importance of considering IUD migration in a patient presenting with abdominal pain and highlights the need for timely diagnosis and intervention to prevent serious complications. Regular follow-up and patient education on the potential risks and signs of IUD complications are essential for early detection and management.

Introduction

Intrauterine devices (IUDs) are a widely used and safe method of long-term contraception, with a global usage rate of 14 to 27% among women [1]. Copper and levonorgestrel-based IUDs are the most effective, boasting a failure rate of less than 1% in the first year of use [2]. Understanding the benefits and potential risks of IUD insertion is crucial for informed decision-making and addressing misconceptions about their use [3].

The literature indicates that pregnancy rates, adverse events, and discontinuation due to side effects within the first two years of IUD use are generally low and not clinically significant [2–4]. However, some studies have found a positive association between lactation and uterine wall perforation, though a causal link has not been established [4]. While uterine perforation is a serious complication, it is rare and often asymptomatic [5]. When perforation occurs, the IUD can migrate to various nearby organs, with reported cases of ectopic localization in the omentum, mesentery, pouch of Douglas, colon, and bladder [6–8].

Aim of The Article

The aim of this article is to present a rare case of intrarectal migration of a copper intrauterine device (IUD) in a 30-year-old female patient, detailing the clinical presentation, diagnostic findings, surgical management, and postoperative outcomes. By sharing this case, the article aims to raise awareness among clinicians about this uncommon but serious complication, emphasizing the importance of timely diagnosis and intervention to ensure optimal patient care.

Presentation of Case

We present the case of a 30-year-old patient with a history of 2 pregnancies and deliveries, who had a copper intrauterine device (IUD) inserted two years ago, the placement of the IUD was done just after birth...
in lactation period. She was admitted to our facility due to severe pelvic pain evolving for 3 days accompanied by constipation, without externalized gastrointestinal bleeding or vomiting. Clinical examination revealed a patient in good general condition, conscious, stable, and afebrile. Abdominal examination revealed generalized abdominal tenderness with hypogastric guarding, while pelvic examinations were unremarkable. Laboratory investigations showed disturbed inflammatory markers with white blood cell count at 15,600/mm³ and elevated C-reactive protein at 121.1mg/l, with negative beta-human chorionic gonadotropin (βhCG).

Abdominal ultrasound revealed fluid collection in the right iliac fossa, along with an echogenic endocavitary image consistent with the IUD. Subsequent abdominal CT scan suggested a right lateral uterine collection likely due to a migrated IUD, with a hyperdense metallic material forming a 'T-shaped' structure, with one end appearing extra-uterine and the other intra-uterine. Additionally, there was discrete infiltration of pelvic fat surrounding the collection, associated with a few sub-centimeter lymph nodes, the largest measuring 9 mm in diameter (Figure 1).

Emergency laparoscopy was indicated but aborted due to a bronchospasm occurring during anesthesia, open surgery was performed therefore, including repair of a centimeter-sized rectal perforation with separate V3/0 sutures, lateral protective colostomy, appendectomy, peritoneal lavage, and drainage of Douglas’ pouch. Intraoperatively, multiple adhesions were found and lysed, along with the discovery of a 1 cm rectal perforation caused by the IUD (Figure 2 and 3). Postoperative recovery was uneventful, with oral intake permitted on postoperative day one and discharge on postoperative day three. Colonic continuity restoration was performed six weeks postoperatively.
**Figure 2: Intraoperative Image Showing the IUD after it Withdrawal from the Rectal Wall**

**Figure 3: Postoperative Specimen**
Discussion
The intrauterine device (IUD) is a widely used, safe, and long-term contraceptive option for women worldwide. However, complications can arise, particularly when IUDs are placed during lactation after delivery while the uterus is soft. One rare but serious complication is uterine perforation, with the IUD migrating into the intestinal cavity and causing sterile perforation.[9] In our case, we report the instances of IUD migration since its placement shortly after birth is identified as a risk factor for bowel injury. The migrated IUD was found perforating the rectal ampulla. However, according to the literature, approximately 80% of IUDs that perforate the uterus end up in the peritoneal cavity, including the pouch of Douglas.[10] The presentation of IUD migration varies based on the site of migration and the type of IUD. Common symptoms include abdominal pain, although bowel perforation can be asymptomatic. In our series, all patients presented with abdominal pain but were otherwise healthy. Asymptomatic cases can remain undetected for years, with bowel or urinary bladder perforations often discovered incidentally during imaging for other issues.[11]
Routine follow-up for IUD placement is not common, leading to delayed detection of migration until patients develop symptoms or become pregnant. Diagnosis during pregnancy is challenging due to the risks of radiation exposure from X-rays and CT scans. For asymptomatic patients, diagnosis and retrieval may be delayed until after delivery. Imaging techniques like CT or MRI are valuable for assessing the involvement of adjacent organs, and colonoscopy may be considered if colonic involvement is suspected.[12,13] Diagnosis is often difficult and delayed. Although laparoscopy is considered the first-line for removal of extraterine intraperitoneal IUDs, laparoscopy and laparotomy are equally effective.[14] Migrating IUDs can be retrieved via colonoscopy or laparoscopy. Colonoscopy is useful for devices within the bowel lumen or wall, while laparoscopy is preferred for intraperitoneal migration or when the IUD is embedded in the colon wall. In our study, laparoscopic retrieval was considered but laparotomy was performed and turned out necessary due to adhesions. The World Health Organization recommends immediate surgical removal of migrated IUDs, with minimally invasive methods preferred initially, but exploratory laparotomy is recommended if the IUD is embedded in nearby organ or perforating it.[14]
Regular IUD counseling and follow-up are crucial for the early detection of IUD migration, allowing for patient-centered care and timely intervention.[3] This case emphasises the need for training midwives in proper insertion of IUDs especially in developing countries, where they have a key role in family planning and the need for post-insertion follow-up. This case also raises the question of whether IUCD insertion should be postponed to 6 months postpartum, rather than 3 months with the risk of pregnancy; but this needs further study.

Conclusion
In conclusion, while IUDs are generally safe, awareness of potential complications such as migration and uterine perforation is essential. Timely diagnosis and appropriate management are key to preventing serious outcomes and ensuring patient safety.

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Consent
As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

Ethical Approval
As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

Conflicts of Interest
Authors have declared that no competing interests exist.

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References