

Endoscopic Removal of Migrated Intrauterine Device: Case Report and Review of Literature and Technique

Yang Lei, MD¹, Vadim Iablakov, MD, PhD², Riaz J. Karmali, MD, MSc³, and Nauzer Forbes, MD, MSc, FRCPC^{1,4}

¹Department of Medicine, Cumming School of Medicine, University of Calgary, Calgary, Alberta, Canada

²Department of Medicine, Schulich School of Medicine, Western University, London, Ontario, Canada

³Department of Surgery, Cumming School of Medicine, University of Calgary, Calgary, Alberta, Canada

⁴Department of Community Health Sciences, Cumming School of Medicine, University of Calgary, Calgary, Alberta, Canada

ABSTRACT

Intrauterine devices (IUDs) are commonly used contraceptive methods. Uterine perforation and device migration are rare but have been/are previously described as adverse events. Migration of the perforated IUD into the bowel is rare and generally requires surgical removal. We describe the endoscopic removal of an IUD embedded in the rectal wall in an otherwise healthy patient. Extraction of the IUD was uncomplicated, well tolerated, and followed by same-day hospital discharge. No prophylactic hemostasis or antimicrobial coverage was needed. We also present a comprehensive review of the reported endoscopic IUD removal. We recommend close investigation and follow-up when pregnancy or other potential signs of IUD migration occur. Endoscopic removal appears to be a safe and cost-effective technique for the extraction of IUDs that migrate into the bowel lumen.

INTRODUCTION

Intrauterine devices (IUDs) are an effective method of contraception, with increasing rates of use in North America.¹ The reported rate of perforation is 0.3–2.6 per 1,000 insertions, with higher rates being associated with inserter's inexperience, post-partum status, breastfeeding status, and abnormal uterine cavity anatomy.² Ultrasound imaging is recommended if perforation is suspected.² Migrated IUDs can be found in the peritoneum, bladder, adnexae, or bowel.^{3,4} IUDs in the bowel are rare and have been removed via laparoscopy, laparotomy, and endoscopy.^{3,5} We present a case of successful endoscopic removal of a migrated IUD and review the literature.

CASE REPORT

A 37-year-old woman initially presented to her family physician with 6 months of left lower quadrant abdominal and pelvic pain. It was associated with dysmenorrhea and worsened with bowel movements. She was otherwise healthy, with no previous surgeries. Estradiol patch was her only medication. She had an IUD placed 2.5 years before, following her third pregnancy. Unexpectedly, she became pregnant within 6 months of IUD insertion and underwent a therapeutic termination of her pregnancy. The IUD was assumed to have fallen out of the uterus, with no examination or follow-up investigations arranged at that time.

As part of the workup for her abdominal pain, she had an outpatient pelvic ultrasound that demonstrated an echogenic lesion at the fundus of the uterus, suggestive of an IUD. A subsequent outpatient pelvic radiograph showed the IUD in the pelvis, possibly outside the uterus (Figure 1). A computed tomography scan showed the IUD outside the uterine cavity, with the long arm likely embedded in the myometrium and serosa and a portion of the short T-limb embedded in the anterior margin of the rectal wall and protruding slightly into the rectal lumen (Figure 2). She was admitted to the hospital under the general surgery service after these findings. The remainder of her investigations were unremarkable. An initial sigmoidoscopy revealed only a small portion of the device, visible endoscopically at 14 cm from the anal verge. After discussion with the patient and general surgical service, it was decided that



Figure 1. Pelvic radiograph demonstrating the intrauterine device in the pelvis, possibly outside the uterus (arrow).

endoscopic removal should be attempted, because surgical intervention would be imminent regardless of unattempted, failed, or complicated endoscopic removal.

Under conscious sedation with midazolam and fentanyl, a standard gastroscope was introduced through the anus. The protruding tip of the T-limb at 14 cm from the anal verge was first gently freed from the mucosa with crocodile grasping forceps (Figure 3). Snare and grasping forceps were then used to carefully extract the embedded portion from the rectal wall, eventually bringing the entire T-angle into the rectal lumen, with significant resistance met on extraction despite the flexibility of the device. Forceps were then used again to pull the remainder of the IUD into the lumen and then to extract it through the anus (Figure 4). The removal site was then closely examined for frank perforation or immediate hemorrhage; neither of which was present. The



Figure 2. Axial computed tomography image demonstrating the interface of the short limb of the intrauterine device and the rectal wall (arrow).

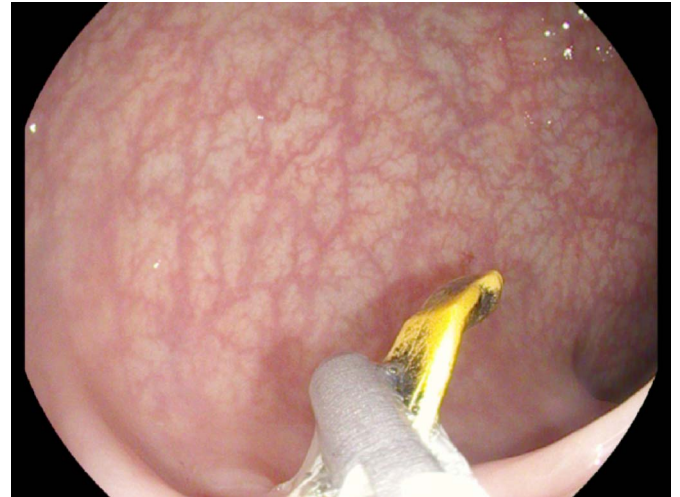


Figure 3. Endoscopic image demonstrating the start of the extraction of the protruding portion of the intrauterine device limb.

decision was made to not prophylactically clip the site, to avoid creating a utero-colonic fistula from the luminal side. On examination of the IUD, it was clear that less than 10% of the device was initially accessible endoscopically, evident by bile staining. The procedure was well tolerated, with no pain or discomfort during or after the removal. Postprocedurally, the patient did not receive antimicrobials, and same-day x-ray confirmed a lack of intraperitoneal free air. She was discharged in stable condition on the same day. On follow-up 2 months after discharge, the patient reported no issues. Pelvic ultrasounds completed 1- and 6-month post-discharge were normal.

DISCUSSION

Although rare, with the increasing use of IUDs, one can safely anticipate a growing number of cases of IUD migration into the bowel. Most of these cases have been removed surgically.^{3,4}

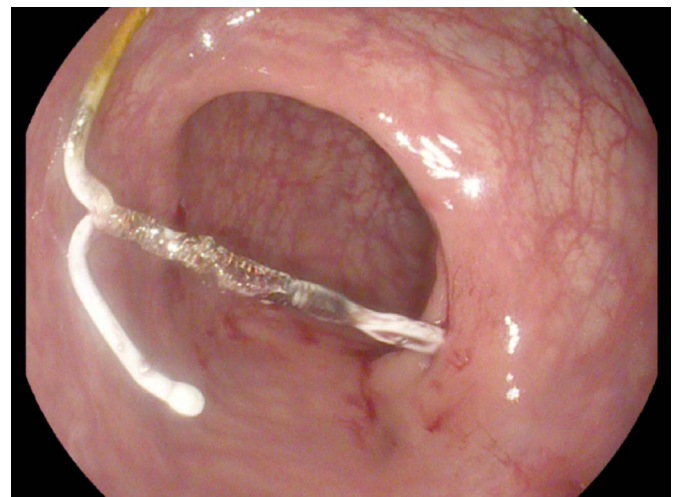


Figure 4. Endoscopic image demonstrating the full endoscopic extraction of the intrauterine device.

When possible, endoscopic removal portends less morbidity and should be considered in cases where there is an endoscopically visible portion of the device. Early reported cases had used proctoscopes or rigid sigmoidoscopes.^{6,7} We identified relatively fewer reported cases of migrated IUDs removed through the anus via flexible endoscopy.⁸⁻¹⁶ Forceps of various types were used in most cases, with some colonoscopic cases using snares as well. One case used a sphincterotome and dormia basket.¹¹ Periprocedural antimicrobial coverage was variable, with no clear indication of benefit. Insights from the literature and from our experience are that (i) lost IUDs should always have radiographic and clinical follow-up, with ultrasound recommended as the initial preferred modality; (ii) endoscopic evaluation is useful in cases of extrauterine devices with evidence of bowel involvement; and (iii) endoscopic removal, rather than surgical removal of IUDs in the sigmoid colon and distally, should be considered as a safe, efficient, and cost-effective strategy, whenever possible.

DISCLOSURES

Author contributions: Y. Lei designed and wrote the article. Y. Lei, V. Iablakov, and RJ Karmali reviewed the literature. N. Forbes designed the article and is the article guarantor. All authors critically revised the article for important intellectual content and provided final approval of the article.

Financial disclosure: None to report.

Informed consent was obtained for this case report.

Received September 30, 2018; Accepted February 14, 2019

REFERENCES

- Mosher WD, Moreau C, Lantos H. Trends and determinants of IUD use in the USA, 2002–2012. *Hum Reprod*. 2016;31(8):1696–702.
- Black A, Guilbert E, Costescu D, et al. Canadian contraception consensus (part 3 of 4): Chapter 7 e intrauterine contraception. *J Obstet Gynecol Can*. 2018;2016(329):182–222.
- Zakin D, Stern WZ, Rosenblatt R. Complete and partial uterine perforation and embedding following insertion of intrauterine devices. II. Diagnostic methods, prevention, and management. *Obstet Gynecol Surv*. 1981;36(8):401–17.
- Kaislasuo J, Suhonen S, Gissler M, La P, Heikinheimo O. Uterine perforation caused by intrauterine devices: Clinical course and treatment. *Hum Reprod*. 2013;28(6):1546–51.
- Chai W, Zhang W, Jia G, Cui M, Cui L. Vesical transmigration of an intrauterine contraceptive device. *Medicine (Baltimore)*. 2017;40(May):4–6.
- Beard RJ. Unusual presentation of translocated intrauterine contraceptive device. *Lancet*. 1981;317(8224):837.
- Seplveda WH. Perforation of the rectum by a copper-T intra-uterine contraceptive device; a case report. *Eur J Obstet Gynecol Reprod Biol*. 1990;35:215–8.
- Assarian A, Raja M. Colonoscopic retrieval of a lost intrauterine contraceptive device: A case report and review of articles. *Eur J Contracept Reprod Heal Care*. 2005;10(4):261–5.
- Medina T, Hill D, DeJesus S, Hoover F. IUD removal with colonoscopy: A case report. *J Reprod Med*. 2005;50(7):547–9.
- Lee JE, Park KS, Kim ES, et al. Removal of a lost intrauterine device by colonoscopy after a successful full-term delivery (with video). *Gastrointest Endosc*. 2010;72(4):898–900.
- Gonenc M, Kalayci MU, Turhan AN, Deniztas C, Alis H. Endoscopic treatment of a transmigrated intrauterine device to colonic wall: A case report. *Am J Obstet Gynecol*. 2011;204(3):e3–5.
- Huertas-Velasco MA, Gómez-Rubio M. Endoscopic removal of intrauterine device penetrated through the rectal wall. *Rev Esp Enfermedades Dig*. 2012;104(8):432–3.
- García-Rodríguez A, Álvarez M, Seoane A. Intrauterine device removal from the sigmoid colon during a screening colonoscopy. *Endoscopy*. 2015;47:E446.
- Yuen A, Ma GW, de Montbrun S, Vlachou PA. An unconventional therapeutic approach to a migratory IUD causing perforation of the rectum. *J Surg Case Rep*. 2016;2016(2):1–2.
- Huh JM, Kim KS, Cho YS, Suh DK, Lee JU, Baek SD. Coloproctology colonoscopic removal of an intrauterine device that had perforated the rectosigmoid colon. *Ann Coloproctol*. 2018;34(2):106–8.
- Ye H, Huang S, Zhou Q, et al. Migration of a foreign body to the rectum. *Medicine (Baltimore)*. 2018;97(28):e11512.

Copyright: © 2019 The Author(s). Published by Wolters Kluwer Health, Inc. on behalf of The American College of Gastroenterology. This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.