

# Migration of a foreign body to the rectum

## A case report and literature review

Hui Ye, MD<sup>a</sup>, Shujuan Huang, MB<sup>b</sup>, Qichang Zhou, MB<sup>a</sup>, Jie Yu, MD<sup>a</sup>, Changlei Xi, MM<sup>a</sup>, Longlei Cao, MM<sup>a</sup>, Peiyun Wang, MM<sup>a</sup>, Zhilin Gong, MB<sup>a,\*</sup>

### Abstract

**Rationale:** Rectal foreign bodies are not an uncommon finding in outpatient departments globally. Most such objects are inserted through the anus. Occasionally, a foreign body may be ingested and may successfully pass through the entire gastrointestinal tract and be held up in the rectum. In extremely rare cases, foreign bodies in adjacent tissues or organs can penetrate the rectal wall and enter the rectal lumen. We report a rare case that the IUCD had migrated and was embedded in the rectal wall. A part of the IUCD was loosened and deformed into a metallic wire that protruded through the anus.

**Patient concerns:** A 45-year-old woman presented with complaints of a metallic wire protruding through her anus when she used the washroom. The wire would become longer when she manually pulled it; however, this process was associated with pain in the lower abdomen, and she therefore stopped manipulating it.

**Diagnoses:** A rectal foreign body secondary to intrauterine contraceptive device (IUCD) migration and rectal perforation, as well as a pelvic cyst.

**Interventions:** Under general anesthesia, she underwent laparoscopic removal of the rectal foreign body, pelvic adhesiolysis, pelvic cyst resection, and ileostomy combined with colonoscopy.

**Outcomes:** Her postoperative recovery was uneventful.

**Lessons:** Foreign bodies in adjacent tissues or organs can penetrate the rectal wall and enter the rectal lumen. Regular follow-up after IUCD insertion is very important. We report this rare case that would increase awareness among clinicians regarding the differential diagnosis and treatment in such cases.

**Abbreviations:** cm = centimeter, IUCD = intrauterine contraceptive device, mm = millimeter.

**Keywords:** foreign body, intrauterine contraceptive device, migration, perforation, rectum

## 1. Introduction

Rectal foreign bodies are not an uncommon finding in outpatient departments globally. The incidence is lower in Asia than in Eastern Europe and is reportedly more common in men than in women. Although this condition occurs in all age groups, the highest rate is observed in young adults. Most such objects are inserted anally. Occasionally, a foreign body may be ingested and may successfully pass through the entire gastrointestinal tract and be held up in the rectum. Rectal foreign bodies include numerous

objects including various dildoes, vibrators, sausages, bottles, fruits, vegetables, nails, light bulbs, animal bones, coins, and packaged drugs.<sup>[1,2]</sup> In addition to anal insertion and oral ingestion, in extremely rare cases foreign bodies in adjacent tissues or organs can penetrate the rectal wall and enter the rectal lumen. We report a rare case of a woman who presented with a metallic wire protruding through her anus when she used the washroom. This object was an intrauterine contraceptive device (IUCD) that had been inserted 22 years prior. Examination revealed that the IUCD had migrated and was embedded in the rectal wall. A part of the IUCD was loosened and deformed into a metallic wire that protruded through the anus.

## 2. Case report

A 45-year-old woman presented with complaints of a metallic wire protruding through her anus when she used the washroom. It would become longer when she manually pulled it; however, this process was associated with pain in the lower abdomen, and she therefore stopped manipulating it. She denied symptoms of anal pain, bleeding, nausea, vomiting, abdominal swelling, and/or fever. She was admitted to the outpatient department of our hospital after cutting the metallic wire at the anal verge (Fig. 1).

She denied a history of any anal insertion or oral ingestion of foreign bodies, and also denied hypertension, diabetes, and heart disease. However, she reported a history of IUCD insertion for contraception thrice (in 1995, 1997, and 2003). All IUCDs inserted were Gräfenberg rings. Of note, the IUCD needed to be removed twice after she underwent an abortion and IUCD migration in 2002 and 2012. She reported an unplanned

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HY and SH contributed equally to this work.

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<sup>a</sup> Department of Colorectal Anal Surgery, <sup>b</sup> Department of Respiratory Medicine, Jingzhou Central Hospital, The Second Clinical Medical College, Yangtze University, Jingzhou, Hubei Province, China.

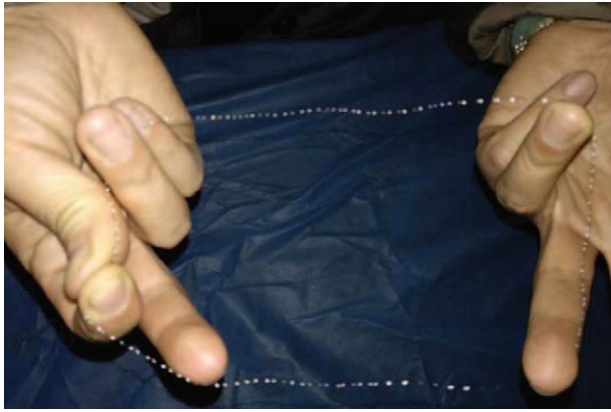
\* Correspondence: Zhilin Gong, Department of Colorectal Anal Surgery, Jingzhou Central Hospital, The Second Clinical Medical College, Yangtze University, No. 1 Renmin Road, Jingzhou 434020, Hubei Province, China (e-mail: yehuihb@sina.com).

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**Figure 1.** The foreign body (metallic wire) is cut at the anal verge. It measured approximately 40 cm in length.

pregnancy twice with the IUCD in place and an abortion in 1996 and 2002, and a history of a cesarean section in 1994, as well as endoscopic surgery for gastric polyps in 2013. The IUCD was not identified by the surgeon during the abortion performed in 1996, and she did not return to the hospital for further examination and general follow-up.

She presented to our hospital with a thin metallic wire measuring 40 cm that was cut at the verge of her anus. A thin metallic wire measuring approximately 1 cm in length could be observed at her anal verge. Signs of peritonitis were absent. A digital rectal examination revealed that proximally the wire extended deep into the rectum and could not be palpated. A plain radiograph of the abdomen and pelvis (Fig. 2) showed an IUCD shadow on the left side of the pelvis corresponding to the S5 vertebral level, located approximately 17 mm from the pelvic centerline. This object was half-ring shaped and was loosened at one end, and liked a line that extended to the direction of the anus. Pelvic computed tomography (CT) (Fig. 3A and B) revealed a funicular high-density shadow on the left side of the pelvis that penetrated the rectal wall in a straight direction (approximately



**Figure 2.** Plain radiograph of the pelvis shows a shadow corresponding to an intrauterine contraceptive device (IUCD) in the pelvic cavity (S5 vertebral level), located on the left, approximately 17 mm from the pelvic centerline. It is half-ring shaped, and 1 end is loosened and appears to extend in the direction of the anus in a linear fashion.

12 cm from the anal margin). Additionally, a linear shadow was visible in the rectal cavity, which was considered to be the migrated IUCD that had perforated the rectum. Moreover, a cyst measuring approximately 5 cm in diameter was visualized on the left side of the pelvis in close proximity to the IUCD. Colonoscopic examination (Fig. 4A and B) showed a metallic foreign body with whorls was embedded in the rectal wall (approximately 12 cm from the anal margin), and a wire connected to this object was observed to be free within the rectal cavity. The surrounding rectal mucosa was hyperemic and edematous. Laboratory parameters were within reference range.

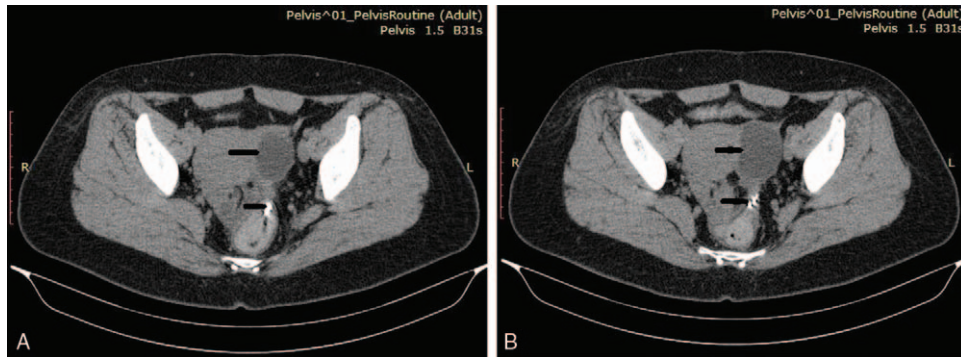
After the usual preoperative preparation, under general anesthesia, she underwent laparoscopic removal of the rectal foreign body with pelvic adhesiolysis, pelvic cyst resection, and ileostomy combined with colonoscopy. Intraoperatively, we observed that her uterus was of the normal size, medium hardness, anteverted and adherent to the rectum, peritoneum and uterine adnexa. A cyst measuring approximately 5 cm in diameter was identified within the left-sided *adnexa* of the *uterus*. However, we could not identify the foreign body after adhesiolysis and resection of the cyst. The foreign body was removed anally during the *colonoscopy* (Fig. 5). The rectal wall showed a defect with its vertical dimension enlarged to 1.5 cm but without any obvious bleeding. Intraoperative radiographs were obtained to confirm that no residual metallic foreign body could be detected. Postoperatively, the patient's recovery was uneventful. Three months later, she underwent closure of the diverting ileostomy, because iodine water radiography and colonoscopic examination showed no rectal fistula, and the rectal wall showed complete healing.

### 3. Discussion

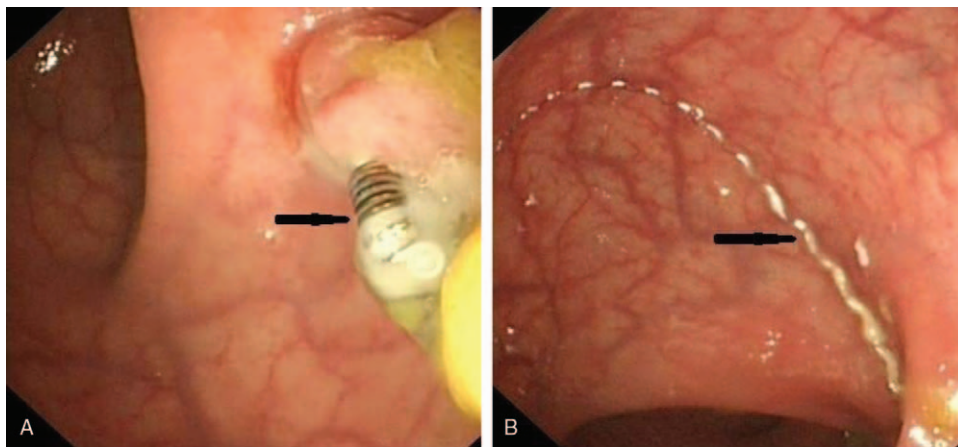
Rectal foreign bodies are not an uncommon finding in outpatient departments globally. Most such objects are voluntarily inserted anally for sexual gratification. Rectal foreign bodies commonly include various dildoes, vibrators, sausages, bottles, fruits, vegetables, nails, and light bulbs among other such objects.<sup>[1,2]</sup> Involuntarily inserted foreign bodies are almost exclusively associated with cases of rape and sexual assault. Another common rectal foreign body, best known as a body pack, is used by drug traffickers. Involuntarily inserted nonsexual foreign bodies are commonly observed in children and elderly individuals. Usually, thermometers and enema tips are foreign bodies inserted anally. Occasionally, foreign bodies including erasers, pill bottle caps, animal bones, coins, or small plastic toys may be ingested and may successfully pass through the entire gastrointestinal tract and are held up in the rectum. Such objects are commonly identified in children, careless eaters, and patients with psychiatric disorders.

Another very rare finding in clinical practice is foreign bodies in adjacent tissues or organs that penetrate the rectal wall and enter the rectal lumen. Our patient presented with a metallic wire protruding through her anus when she used the washroom. She reported a history of undergoing IUCD insertion thrice for contraception. The first IUCD had been inserted 22 years prior to presentation. Examination revealed that the IUCD had migrated and was embedded in the rectal wall. A part of the IUCD was loosened and was deformed into a metallic wire that would protrude through her anus. This is an extremely rare case, and such cases have not been reported in the literature globally.

IUCD is one of the most popular and modern means of contraception used worldwide.<sup>[3]</sup> The device is made of different



**Figure 3.** (A) Pelvic computed tomography (CT) scan shows a high-density shadow in the rectal wall and the rectal cavity and a cyst (approximately 5 cm in diameter) on the left side of the pelvic cavity. (B) Pelvic computed tomography (CT) scan shows a high-density shadow on the anterior aspect of the rectum and a cyst (measuring approximately 5 cm in diameter) on the left side of the pelvic cavity that is in close proximity to the shadow.



**Figure 4.** (A) Colonoscopic image shows a metallic foreign body with a whorled appearance is embedded in the rectal wall (approximately 12 cm from the anal margin). The surrounding rectal mucosa is hyperemic and edematous. (B) Colonoscopic image shows a wire lying free within the rectal cavity.

materials such as stainless steel, plastic and silicone rubber and could be circular, T-, V-, Y- or chain-shaped, among other such models. The first modern IUCD was introduced in 1909.<sup>[4]</sup> After its application and observation for more than 100 years, it is now considered a widely used method of contraception with rare

complications such as perforation, infection, and ectopic pregnancy. A few complications associated with IUCD insertion are already described in the literature such as pelvic inflammatory disease, abdominal pain, expulsion, retraction into the cervix or uterus, and uterine perforation.<sup>[5,6]</sup> Reportedly, the incidence rate of perforation is between 0.05 and 13 per 1000 cases.<sup>[7]</sup> Several reports in the literature have described migration of IUCDs; however, few have described IUCD penetration of the gastrointestinal tract, particularly the rectum and/or the anus. Perforation appears to be related to the type of device,<sup>[8]</sup> time of insertion, breastfeeding,<sup>[9,10]</sup> position of the uterus, skill of the operator, and compliance with follow-up.<sup>[11,12]</sup> Perforation usually occurs at the time of insertion<sup>[13,14]</sup>; however, delayed perforation is also reported in the literature, but the incidence rate is lower than that in the former category.<sup>[15]</sup> These patients may present with pregnancy or lost strings or may remain asymptomatic for several years. The common symptom, however, is abdominal pain, fever, and diarrhea.

In our patient, the first IUCD was inserted in 1995; however, it was not detected by the surgeon during the abortion procedure performed in 1996. Although she was asymptomatic since IUCD insertion, we speculate that the IUCD might have already migrated by the time she underwent the abortion and it was not in the uterine cavity, and its specific location could not be ascertained because she did not return for further examination



**Figure 5.** The foreign body is observed after removal anally. The postoperative appearance and shape of the foreign body can be observed in this image.



and general follow-up. It is possible that the IUCD slowly penetrated the uterine wall and entered the abdominal cavity, gradually migrated toward the rectum and subsequently perforated the rectal wall owing to the intra-abdominal pressure. The IUCD was loosened and became deformed into a metallic wire, which gradually migrated toward the anus and was finally observed to protrude through the anus. The patient remained asymptomatic perhaps because important structures such as vessels and nerves remained uninjured, and the process of IUCD migration and perforation was not accompanied by infection.

The patient experienced pain in the lower abdomen when she pulled at the protruding wire, which indicates that the foreign body was closely associated with abdominal viscera. A blind procedure could not be performed for foreign body removal owing to the potential risk of damage to the surrounding tissues or organs. It is important that the surgeon confirm the nature of the foreign body and its relationship with surrounding organs (such as the rectum) prior to intervention. Obtaining a careful and complete history is important to confirm whether a patient might have anally inserted or orally ingested foreign bodies.

Physical examination of the abdomen should be performed carefully to rule out peritonitis. Rectal examination should be performed to initially assess the relationship between the foreign body and the rectum and to identify the location of the object, although the operator must check gently to avoid further damage. Laboratory evaluation is not very helpful in the diagnosis except where perforation is suspected or preoperative preparation is required. Radiological evaluation is more important than laboratory tests. Lateral and anteroposterior radiographs of the pelvis and the abdomen should be obtained to determine the shape, position, and the size of the foreign body and to rule out pneumoperitoneum. CT should be performed to confirm the accurate location of the foreign body and identify the clear boundaries between the object and its surrounding tissues or organs. Colonoscopic examination can confirm the relationship between the foreign body and the rectal wall and ensure the exact location along the wall if there exists a penetrating injury.<sup>[16]</sup> Postoperative colonoscopy is useful to confirm side injury or bleeding, the degree of damage, and to perform endoscopic hemostatic therapy.<sup>[17]</sup>

Pelvic CT and radiographic evaluation performed in our patient revealed that the patient showed complications secondary to IUCD migration and perforation of the rectum and that a part of the IUCD was located inside the rectal wall and cavity, and another part was located outside the rectum. The IUCD was half-ring shaped and 1 end was loosened and was deformed into a metallic wire. The patient experienced pain in the lower abdomen when she pulled the metallic wire protruding through her anus. This observation indicated a potential risk of damage to surrounding tissues or organs and the possibility of IUCD fracture if it were to be roughly and blindly removed anally. Additionally, CT also revealed a pelvic cyst in close proximity to the IUCD. Therefore, we performed exploratory laparoscopy, with adhesiolysis and resection of the cyst and determined whether the IUCD was exposed in the pelvic cavity. To reduce the chance of injury and infection, we removed the IUCD anally using a vascular clamp during the colonoscopy because it was not visualized during the laparoscopy. However, a defect (approximately 1.5 cm length) without obvious bleeding was observed in the rectal wall. Thus, we performed an ileostomy to promote wound healing after confirming that no residual metallic foreign

body was detected by the C-arm X-ray system. The patient remained asymptomatic and showed an uneventful postoperative recovery.

### Author contributions

**Conceptualization:** Hui Ye, Shujuan Huang, Qichang Zhou, Jie Yu, Zhilin Gong.

**Data curation:** Hui Ye, Shujuan Huang, Qichang Zhou, Jie Yu, Changlei Xi, Longlei Cao, Peiyun Wang.

**Formal analysis:** Hui Ye.

**Investigation:** Hui Ye, Shujuan Huang, Changlei Xi, Longlei Cao, Peiyun Wang.

**Methodology:** Hui Ye, Shujuan Huang, Qichang Zhou.

**Project administration:** Hui Ye.

**Resources:** Hui Ye, Shujuan Huang, Longlei Cao, Zhilin Gong.

**Supervision:** Hui Ye, Zhilin Gong.

**Validation:** Hui Ye.

**Visualization:** Hui Ye, Jie Yu, Changlei Xi, Zhilin Gong.

**Writing – original draft:** Hui Ye, Shujuan Huang.

**Writing – review & editing:** Hui Ye, Shujuan Huang, Zhilin Gong.

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