

Received: 2020.10.27

Accepted: 2020.12.22

Available online: 2021.01.09

Published: 2021.02.20

A 47-Year-Old Woman with Gastric Transmigration of an Intrauterine Contraceptive Device Managed by Laparoscopic Wedge Gastric Resection

Authors' Contribution:

Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

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Conflict of interest: None declared

Patient: Female, 47-year-old
Final Diagnosis: Perforated intrauterine contraceptive device
Symptoms: Asymptomatic
Medication: —
Clinical Procedure: —
Specialty: Surgery

Objective: Unusual clinical course

Background: Intrauterine contraceptive devices (IUCD) are commonly used. Although IUCD use is considered safe, one adverse event is uterine perforation and its migration into surrounding organs. Migrations into the urinary bladder and the intestine have been sometimes reported. We here report a very rare case in which an IUCD migrated into the stomach; gastric endoscopy incidentally revealed the IUCD half embedded and half in the gastric lumen. To our knowledge, this is the second report ever of IUCD migration into the stomach.

Case Report: A 47-year-old woman with BMI 36.2 visited us as a candidate for an intragastric balloon to reduce her weight. An IUCD was inserted 18 years ago and was not yet removed. Diagnostic gastric endoscopy revealed a foreign body appearing to be an IUCD. Endoscopic removal failed. Computed tomography indicated the presence of an IUCD through the gastric cavity and thus we performed laparoscopic removal of the IUCD with wedge resection of the stomach. A penetrating IUCD was confirmed.

Conclusions: A gastric foreign body can be a migrated IUCD. Although rare, we must be aware that IUCDs can migrate into unexpected organs.

Keywords: Intrauterine Device Migration • Intrauterine Devices • Laparoscopy • Uterine Perforation

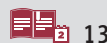
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Background

To begin with, the intrauterine contraceptive device (IUCD) is one of the most prominent and favored contraceptive methods used globally since 1965 [1]. It was calculated that approximately 1.16 billion women use this method, specifically with an estimated rate of 5.3% of the world's female population in a study conducted from 2006 to 2010 [2]. In addition, this method is taking the lead among all other contraceptive methods, making it the most common reversible contraceptive method [2,3]. IUCD use contributed to reducing the risk of unintended pregnancies, especially in the postpartum period, making it the most appropriate time for insertion of the device [4,5], and this was the main reason behind the huge percentages of women using it. There are many advantages to using an IUCD: it is inexpensive method, reversible, long-lasting, very functional, and effective [3]. Nevertheless, it is not free of complications, as IUCD insertion can be associated with expulsion, pelvic inflammatory disease, retraction into the cervix, and uterine perforation [3]. Uterine perforation is a very serious complication, but it rarely occurs. The incidence of uterine perforation is estimated to be 0.2-9.6 cases per every 1000 IUCD insertions [6]. The risk factors for uterine perforation by an IUCD are not sufficiently studied. However, some studies discovered a connection between several factors. For instance, if the device was inserted by an inexperienced physician, if the patient is lactating during the time of insertion, if the patient has low parity, or even if the patient has a history of multiple abortions. The patient can be asymptomatic, or symptomatic presenting with abdominal pain, pelvic pain, dysuria, polyurea, or vaginal bleeding [2,7]. A perforated IUCD can be found in different surrounding organs, but most commonly the intestinal tract and urinary bladder [8]. An IUCD was only found once inside the gastric serosa [8]. To the best of our knowledge, this is the second published report of an IUCD found inside the gastric cavity, but our patient was asymptomatic.

Case Report

A 47-year-old married woman with 3 children presented to our clinic with progressive weight gain and failure to lose weight by conservative measures since the previous year. The patient came with a history of depression treated with selective serotonin reuptake inhibitors (SSRIs). She had a history of 3 cesarean sections, and the last one took place 17 years ago. Furthermore, she had an IUCD inserted before her previous pregnancy and never removed, not even after her cesarean section. No other comorbidity was found, and the rest of the systemic review was unremarkable.

The patient's vitals were: a heart rate of 71, blood pressure of 114/63, respiratory rate of 19. During the examination, the patient was conscious, alert, and oriented, without jaundice, and she was not pale. The patient's abdomen was distended due to obesity, her weight was 87 KG, height 155 CM, and a BMI of 36.2. The cesarean section scar was visible. Other examination results were unremarkable.

An endoscopic gastric balloon insertion was planned for the patient, and during the procedure a foreign body was found inside the stomach (**Figure 1**). Initially, it was believed that it is removable, but the foreign body was adherent, and it was quite challenging to handle and manipulate. Multiple attempts were made to remove it, without success. Consequently, the patient was transferred to the general surgery clinic and was scheduled for further workup. A plain CT scan was performed for the abdomen and pelvis area. A T-metallic density foreign body was found penetrating the greater gastric curvature, with its tip noted inside the gastric cavity, and it was concluded that it is most likely a migrated IUCD (**Figure 2**).

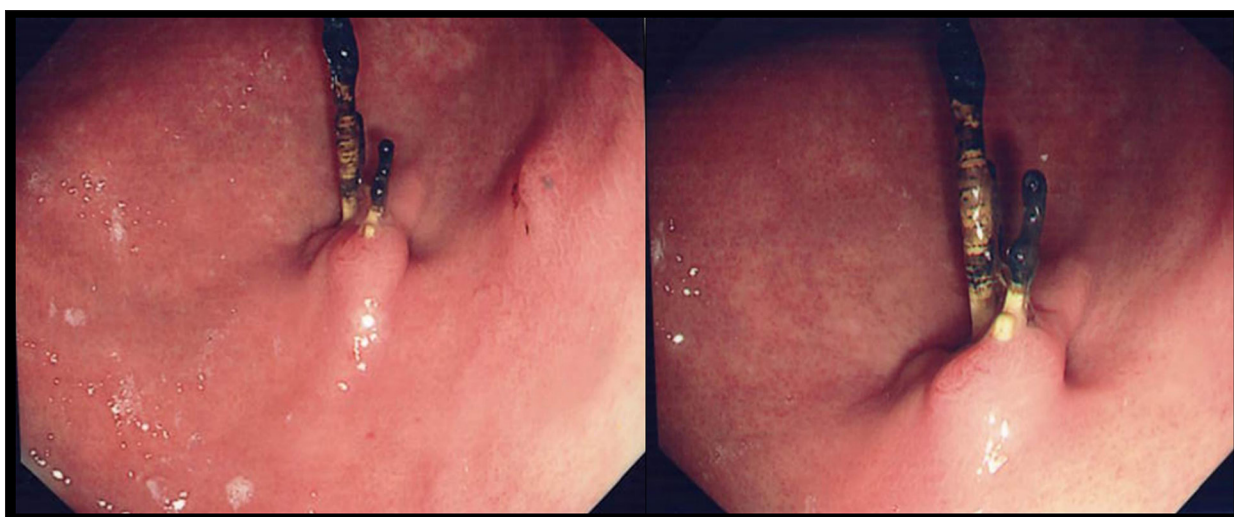


Figure 1. Endoscopic finding of the IUCD penetrating the gastric mucosa.



Figure 2. A CT scan of the abdomen and pelvis showing a metallic density (arrows). (A) Axial section. (B) Coronal section. (C) Sagittal section.

After a consultation among a radiologist, gynecologist, gastroenterologist, and a surgeon, a diagnosis of migrated IUCD was reached. A trial of endoscopic removal was planned, but it unfortunately failed. Afterwards, a laparoscopic exploration was discussed and advised by the surgeon to the patient to remove the IUCD, with retaining the possibility of performing a wedge resection/sleeve gastrectomy of the stomach in order to do what was medically best for the patient, and to satisfy her need to achieve weight loss.

During the procedure, the abdomen was insufflated by CO₂ pressure 15, and trocars were inserted. There were adhesions between the stomach, omentum, and transverse colon. Accordingly, adhesiolysis was performed. The IUCD was adherent to the posterior lateral wall of the stomach, and it was difficult to remove the IUCD. Later on, we encountered bleeding when we tried to move it. Therefore, a sleeve gastrectomy was feasible, and the IUCD was included in the resected part. The procedure was performed using an EndoGIA stapler, and reinforced by PDS suture 2.0. We also resected the division of short gastric vessels and the lateral omentum attachment at the greater curvature. The resected part was firmly adherent to the IUCD.

The patient was discharged home with no complications. At 1 week after surgery, the patient was seen in the outpatient clinic, and she was started on a postoperative course consisting of 4 phases as a post-sleeve diet regimen, wounds were intact, and she was scheduled to start taking vitamins 1 month after the operation, in addition to following up with a dietitian.

Discussion

IUCDs are widely used and have the advantage of being able to be removed at any time. It is also considered to be a safe and inexpensive contraceptive method. The effectiveness of the device is nearly 99%. The device is available in 2 different

types in the market; one with progesterone and the other without progesterone. The device that was used on our patient was without progesterone. IUCD use has a risk of complications such as infection, expulsion, or perforation. Some of these complications are short-term, and others can be long-term, such as the risk of perforation, which usually occurs a long time after insertion. This is called IUCD migration, which is what occurred in our patient.

Some patients have initial symptoms like the absence of the thread, which should be checked after every menstrual period. Other symptoms will depend on the device's site, and can present with abdominal or pelvic pain, dysuria, polyurea, and vaginal bleeding, or can be asymptomatic, as in our patient. An appearance of any of the symptoms mentioned above should alarm patients to seek and visit a gynecologist to evaluate and reassess the IUCD position clinically or radiologically. According to the manufacturer's recommendation, the IUCD should be replaced about every 5 to 10 years after its insertion. The IUCD can be removed at any time in case of malposition. Many women using IUCDS disregard the instructions and need to be examined after insertion for a long period.

Perforation may occur early in the process of insertion, often within 6 months [9]. A Swedish study by Anderson' et al reported that 80% of these perforations appeared during the lactating period after insertion [10], but the mechanism underlying this is unclear. If the perforation takes place a long time after the insertion, it can be unnoticed, as in our patient. The patient denied experiencing any symptoms or problems that would have led her to seek mandated medical attention [11]. This means that our patient had an erosion of the IUCD. Complete migration of the device remains a possible outcome. Considering the anatomical position of the uterus, the adjacent organs that could be expected to be invaded by the device are the urinary bladder, intestine, and colon. About 15% of perforated IUCDs were found embedded in the adjacent organs, and there is only 1 previous report of an IUCD

found embedded in the stomach [8]; in that case, the patient complained of abdominal and back pain, unlike our patient, who was asymptomatic. Another possibility is that the perforation may have happened during the patient's last pregnancy, since she underwent a cesarean section with the IUCD still in place. Additionally, the obstetrician might have missed the perforation during the procedure.

The management plan for this complication is surgical removal, which was performed by open surgery, but since laparoscopic surgery has many advantages over open surgery, and we live in an era that facilitates advanced laparoscopic surgery, it is the recommended and preferred surgery [12]. Frances transferred 22.5% of his surgeries from laparoscopic to open surgeries. Overall, this systematic review supports the use of laparoscopic surgery. Preoperative localization of the IUCD will minimize the conversion rate [13].

In our case, a foreign body was found by upper GI endoscopy. There was an attempt to remove, or at least identify, this foreign body. This attempt was unsuccessful, as it was partially invading the mucosa, with unclear margins, and it was incompletely eroding the stomach layers. Therefore, further workup was done by a plain CT abdomen, which then revealed a foreign body that was seen penetrating the greater curvature of the stomach with its tip noted inside the gastric cavity.

There still remains the question of what is the caused the IUCD to migrate, especially to the stomach. Theoretically, this can be a result of the expulsion that may have happened after the third cesarean section, but there is insufficient evidence on this because the operation was performed 17 years ago, and unfortunately the patient did not remember any details regarding this operation, and she has lost contact with her obstetrician.

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A standard 3-port technique was used with two 12-mm torchers and one 5-mm in our case. The first 12 mm was inserted at the left upper quadrant 5 cm below the costal margin, the second 12 mm was also at the right upper quadrant, and the third 5 mm port was inserted at the midline 5 cm above the umbilicus. The adhesiolysis that was used to separate and open the stomach's lesser sac was performed using the LigaSure device to get all the greater curvature and take down the short gastric vessels up the GE junction. While using the EndoGIA stapler with a green 60 mm reload, we started a wedge resection, and began to remove the embedded device as in sleeve gastrectomy surgery. Resection of the stomach took place with the device embedded. Later on, hemostasis was secured, and the resected part was retrieved in the specimen bag via the 12 mm port. The patient stayed overnight, and resumed taking oral liquids. The postoperative recovery was uneventful. She visited the clinic one week later for her check-up, and was healed and had resumed activities of daily living. Her follow-ups after 3 and 6 months after surgery revealed a smooth recovery. Additionally, she lost 35 kg and has a BMI of 26.6.

Conclusions

The migration of the IUCD to the stomach is an odd and uncommon complication. Careful history-taking and workup for the abnormal findings in our case helped provide clues to the diagnosis. Our patient was asymptomatic, and the management plan was safe and feasible using the laparoscopic approach.

Conflict of Interest

None.