Asymptomatic cecal perforation and ileocecal fistula after intrauterine device migration: a case report

Yahya Almarhabi1,2,3,*

1Department of Surgery, Faculty of Medicine, King Abdulaziz University, Jeddah, Makkah, Saudi Arabia,
2Center of Excellence in Trauma and Accidents, King Abdulaziz University, Jeddah, Makkah, Saudi Arabia,
and 3Clinical Skills and Simulation Center, King Abdulaziz University, Jeddah, Makkah, Saudi Arabia
*Correspondence address. Department of Surgery, Faculty of Medicine, King Abdulaziz University, P.O. Box 80215, Jeddah 21589, Saudi Arabia.
Tel: 0126401000 Ext. 21189; Fax: 0126408347; E-mail: Yalmarhabi@kau.edu.sa

Abstract
Implantation of an intrauterine device (IUD) is a common method for long-term contraception. However, IUDs can cause colon perforation and fistula formation. We report a case of cecal perforation and ileocecal fistula secondary to IUD migration. The present study investigated incidental identification of a missing IUD after 9 years of deployment in a 35-year-old female with a three-year history of infertility. Abdominal imaging revealed a missing IUD. Intracecal perforation and ileocecal fistula consequent of IUD migration were identified during surgical exploration. Limited ileocecal resection was performed as an appropriate and safe surgical option. IUD migration can present with serious complications. Patients considering IUDs should be educated about the importance of regular check-ups to monitor the position of the IUD. Thorough examination should be carried out if a missing IUD string is reported.

INTRODUCTION
Intrauterine devices (IUDs) are a widely used and safe method of contraception. It is estimated that IUDs are used in around 9–14% of patients using long-term contraception worldwide [1, 2]. However, IUDs can present with rare complications such as uterine perforation, which occurs in approximately 1.3–1.6 cases per 1000 [1, 3].

This is a case of IUD perforation, intraluminal cecal perforation and ileocecal fistula. A literature review was carried out to assess the clinical presentation and management of IUD complications.

CASE REPORT
This was a 35-year-old married, multigravida female who was admitted to the Obstetrics and Gynaecology department of our institution for an elective exploration laparoscopy to retrieve a missed IUD. The patient was healthy otherwise. The patient’s obstetric history, an insertion of an IUD more than 9 years ago, was carried out at a private clinic. During a routine check-up 6 months after implantation, the IUD string had disappeared. A presumptive diagnosis of spontaneous expulsion was made. The patient underwent a new implantation of IUD, which was carried out at the same private clinic. The IUD was removed 2 years later. The patient has since had a successful pregnancy and the foetus was delivered by a Caesarean section (CS) 1 year after removal of the IUD. However, over the last 3 years, the patient has experienced difficulty conceiving. The patient has not experienced any complaints. During radiological tests, a foreign body in the right lower quadrant was detected by hystersalpingogram. Based on these findings, laparoscopy exploration to retrieve the presumptive IUD was carried out.
On admission, the patient's vital signs were normal. The patient was conscious and alert, with normal body-built habits. No anomalies were detected. No abdominal tenderness was observed. The results of her blood works were normal.

The patient underwent laparoscopic exploration. The obstetrics and gynaecology team were unable to locate the IUD in the free peritoneal cavity. However, the team identified adhesion at the level of the ileocecal junction and suspected a foreign body in the cecum with ileocecal fistula. The laparoscopic examination transitioned to an open laparotomy by route of the patient's existing CS scar, and our team was called to carry out the procedure. A consent to carry out exploratory laparotomy was sought.

The laparotomy demonstrated that the IUD had penetrated the cecal wall through the base of the cecum. The IUD was palpated within the cecum (Fig. 1). The IUD was not fully mobile and was located approximately 8 cm from the appendix. In addition, ileocecal fistula was apparent between the terminal 7 cm of the ilium, and the entry point of the IUD at the base of the cecum (Fig. 2). A normal appendix was visualized at the base of the cecum (Fig. 3). Fibrosis in the uterine fundus was also observed. There were no other abnormalities to report.

Given the immobility of the foreign body and ileocecal fistula, a limited ileocecal resection was performed with a side-to-side anastomosis. We identified the missed IUD in the resected specimen (Fig. 4). The patient was discharged on post-operative day three with follow-up in the clinic.

**DISCUSSION**

The IUD is considered a safe and reversible long-term contraception option. IUDs are inexpensive, which makes them a preference contraceptive approach in developing countries when compared with developed countries (14.7 vs. 8.9%, respectively) [1, 4].

IUD expulsion is mostly reported with an incidence of up to 25% [1, 5]. After suspected IUD migration, a thorough gynaecological examination and radiological investigations should be performed [3, 6]. It is recommended that patients undergo a regular check-up to avoid possible IUD migration [1, 3, 4]. In this case study, the details of the presumptive diagnosis of IUD migration are not available; however, the second IUD implantation was carried out by the same medical staff that carried out the initial IUD insertion.

The risks associated with the use of IUDs include uterine bleeding, abortion and ectopic pregnancy [3]. Unwanted pregnancies have been observed in 30% of IUD users [3, 5]. IUDs present with rare but serious complications such as uterine perforation and migration of the IUD. The most involved organs are the omentum and gastrointestinal tract (GIT). Of the GIT, the sigmoid colon is the most commonly involved portion of the GIT (40.4%) [7]. In the present case study, the cecum was affected, which is very rare.

There are many risk factors of IUD penetration. These can be related to the IUD itself. Patient factors include the uterine anatomical configuration and the insertion period [1, 7]. The experience of the surgeon is another related factor [7]. In the
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ETHICAL APPROVAL
The study was approved by Ethics Committee of Aya Hospital.

AUTHOR CONTRIBUTIONS
Yahya Almarhabi-Data collection, editing of manuscript, drafting of manuscript, and literature review.

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CONSENT
Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

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Figure 4: IUD in the resected bowel.

CONCLUSION
IUDs are effective contraceptive measures. Diagnosis of a migrated IUD should be based on a thorough gynaecological examination and appropriate radiological imaging approaches. Surgical removal is a first-line option to avoid serious complications.

CONFLICT OF INTEREST STATEMENT
The author declares that he has no conflict of interest.