

Vesical transmigration of an intrauterine contraceptive device

A rare case report and literature review

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Abstract

Rationale: Displacement of an intrauterine contraceptive device (IUD) is a rare and serious complication of IUD insertion. Theoretically, it can migrate to anywhere in the pelvic and abdominal cavity. However, it is not usual for an IUD to migrate to the bladder.

Patient concerns: In this case report, we reported a patient with chronic urinary symptoms caused by the migration of an IUD into the bladder. The displacement of the IUD led to contraception failure and IUD retention in the bladder for 5 years.

Diagnoses: Pelvic ultrasonography (US), radiography, and cystoscopy examinations confirmed the migration of IUD in bladder.

Interventions: The patient underwent cystoscopy.

Outcomes: The M_{CU} IUD was successfully removed without any complications.

Lessons: Our study demonstrated that a missing IUD should be followed up and removed early to avoid possible serious complications.

Abbreviations: IUD = intrauterine contraceptive device, US = ultrasonography.

Keywords: bladder, intrauterine contraceptive device, migration, uterine perforation

1. Introduction

Applying an intrauterine contraceptive device (IUD) is one of the most popular methods of birth control worldwide. IUDs possess many advantages, such as safety, convenience, painless to insert, and low cost.^[1] However, displacement of an IUD occurs relatively frequently and can cause serious complications, including contraception failure, pelvic and abdominal inflammation disease, bowel perforation and obstruction, and adjacent organ perforation.^[2] As far as we know, the migration of an IUD into the bladder, where it causes chronic urinary symptoms, occurs rarely. In this report, we detailed a case in which the ectopic IUD migrated to the bladder, caused contraception failure, and did not attract the patient's attention sufficiently.

2. Case report

This study was approved by the Ethics Committee and Institutional Review Board of the First hospital of Jilin University, Changchun, China.

A 26-year-old woman presented to the gynecology and obstetrics department of our hospital and complained of urinary frequency and urgency, hematuria, and waist and abdomen pain lasting for 5 years. Notably, the patient had received symptomatic treatment for recurrent urinary symptoms without resolution. According to her medical records, an M_{CU} IUD, a widely used IUD in China, had been inserted as a contraceptive method about 6 years ago. While still retaining the IUD, she became pregnant (Fig. 1) and underwent a cesarean section in February 2012. The doctors did not find any signs of IUD at that time, which suggested that the M_{CU} IUD had displaced with both copper sides embedded in the muscular layer of the uterus. After recovering from the cesarean, another general IUD was inserted.

In our hospital, physical examination findings and vital signs were within normal limits. Urinalysis revealed red blood cells, 324.43 mmol/L; white blood cells, 25 HP⁻¹; bacterium, 18.16 μL^{-1} . The pelvic ultrasonography (US) showed a strip of strong echo in the bladder and a strip of moderate echo in the uterus (Fig. 2A). The stripped materials were about 28 × 4 mm and 18 × 4 mm in size, respectively, which did not move with the body. US also revealed 2 spots with strong echo in the bladder in another section (Fig. 2B). Plain radiography confirmed 2 materials with strong echo, one of them was V-shaped, whereas the other was oval (Fig. 3). Cystoscopy showed a complete M_{CU} IUD with no damage to the bladder wall (Fig. 4).

Based on these findings, it is believed that the stripped material and spot materials with strong echo in bladder belonged to the migrated M_{CU} IUD (Fig. 2A and B) and the other stripped

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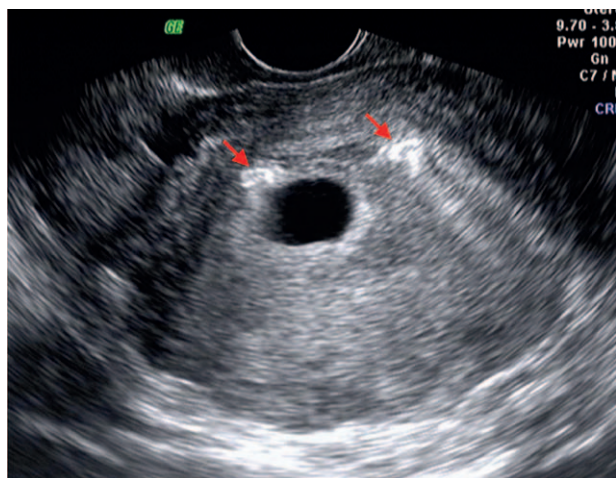


Figure 1. Ultrasound examination showing the MCu intrauterine device (IUD) (red arrows) during pregnancy. IUD = intrauterine contraceptive device, US = ultrasonography.

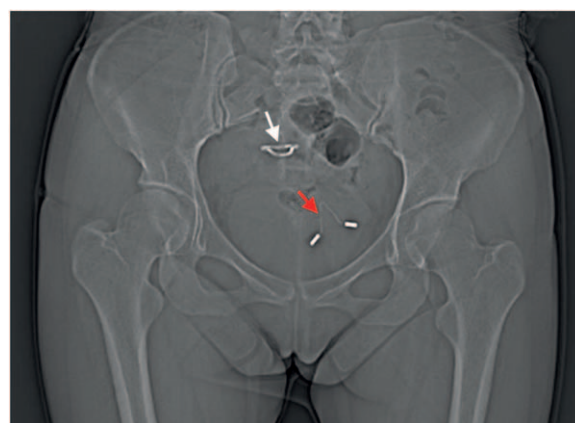


Figure 3. Plain radiography showing one general intrauterine device (IUD) (white arrow) and the MCu IUD (red arrow) in the pelvic cavity. IUD = intrauterine contraceptive device.

material with moderate echo in uterus was the other IUD (Fig. 2A). The 2 materials with strong echo which were revealed by plain radiography were the MCu IUD in the bladder and the other IUD in the uterus (Fig. 3). Therefore, the diagnosis was MCu IUD migration to the bladder, leading to chronic urinary symptoms. The MCu IUD was successfully removed by cystoscopy without complications.

3. Discussion

Uterus perforation is one of the most serious complications of IUD placement. However, the incidence of perforation is only about 1/1000 insertions.^[3] Because some perforations do not cause any clinical symptoms, the actual perforation rates may be

a little higher. Many factors determine the occurrence of uterine perforation, such as the IUD type, insertion skills, and insertion time.^[4] Furthermore, uterine contraction can accelerate perforation of the uterus and the migration of IUD. In this case, the patient experienced IUD displacement and became pregnant with the MCu IUD in her body. US confirmed the IUD migration. The uterus contracted during puerperium, which accelerated the perforation of the uterus and displacement of the IUD.

Once an IUD perforates the uterus, it can move freely into many places, not only in the pelvic cavity, but also in the abdominal cavity. Although many perforated IUDs do not induce clinical symptoms in a short time, they can lead to the adhesion of nearby tissues, chronic abdominal and pelvic inflammation, the perforation of other organs, and obstruction of intestines.^[5,6] In the present study, the perforated MCu IUD migrated to the

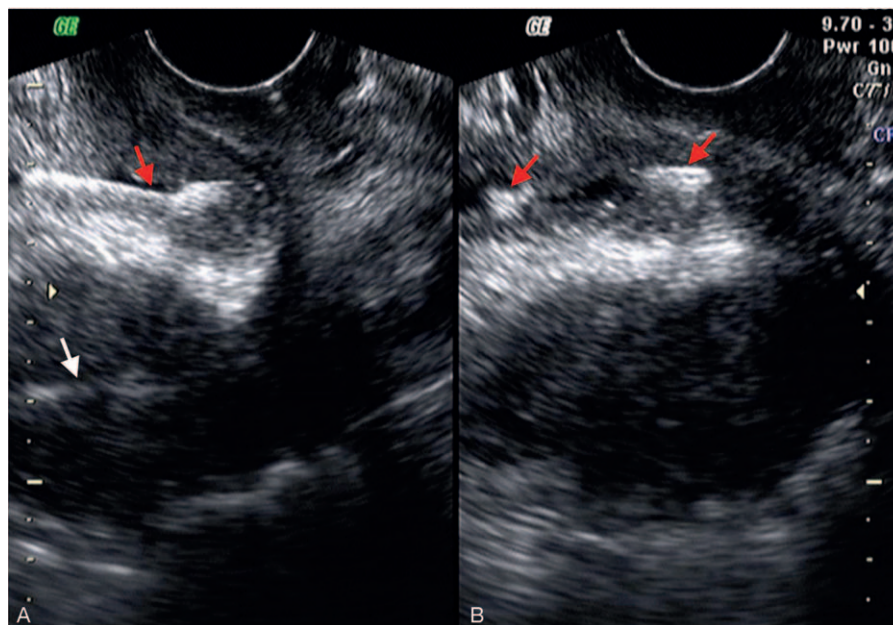


Figure 2. Ultrasound examination of the bladder and uterus. (A) US showing MCu intrauterine device (IUD) with a strong echo in the bladder (red arrow) and another IUD with a moderate echo in the uterus (white arrow). (B) US showing MCu IUD with strong echo (red arrows) in the bladder. IUD = intrauterine contraceptive device, US = ultrasonography.

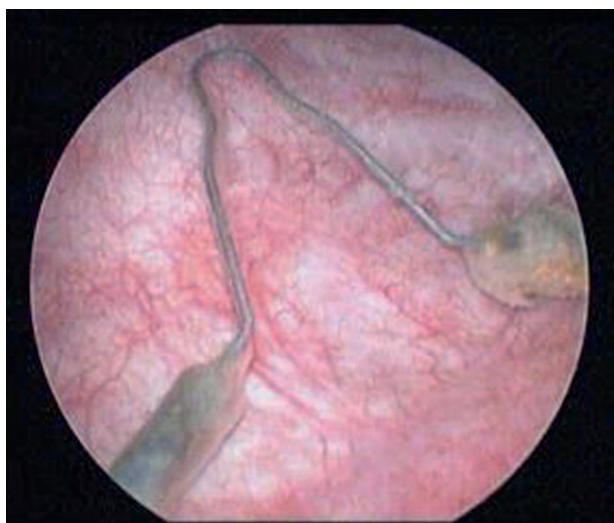


Figure 4. Cystoscopy showing a complete MCu intrauterine device (IUD) with no damage to the bladder wall. IUD = intrauterine contraceptive device.

bladder. Although the perforated bladder healed without any treatment, chronic urinary symptoms persisted for a long time. These symptoms were absolutely caused by the migrated MCu IUD, but the specific reason is still unclear.

With the development of modern imaging techniques, localizing an IUD is not difficult. In clinics, US and plain radiography scan analyses are effective and commonly used techniques.^[2,3,7] Through US, we could examine the general position and integrity of an IUD. Plain radiography can clearly describe whether an IUD exists in the body, but localizing it is difficult. Hysteroscopy can help us to accurately understand the relationship between an ectopic IUD and the uterus, observe the endometrial status, and remove the ectopic IUD. As a result, combining multiple examinations to provide an accurate diagnosis is important. In our report, according to the US, plain radiography, cystoscopy, and clinical history, an accurate diagnosis was provided quickly.

Taking into account the reasons that might lead to the displacement of an IUD, more efforts should be made to avoid IUD migration. After IUD insertion, a regular examination to ensure its proper position is necessary and important. Although some perforated IUDs do not cause clinical symptoms, it is better to properly remove them to avoid the damage of other organs. In this report, the displacement of IUD led to contraception failure and the patient decided to keep the fetus. Therefore, the IUD was not removed immediately. The ectopic IUD was not found during the cesarean section, thus the patient was not aware of it. The insertion of IUDs should be performed in sterile conditions and by professional staff. The condition of uterus should be assessed to choose the most appropriate IUD. Choosing appropriate time to insert an IUD is also important. It is not appropriate for patients who aborted many times to insert an IUD. An IUD should be immediately removed in menopausal women.

In the reported case, the ectopic IUD led to contraception failure, migration to the bladder, and chronic urinary symptoms. Our study demonstrated that a missing IUD should be noticed and immediately removed to avoid further complications.

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