

Cystoscopy to remove an intrauterine contraceptive device embedded in the urinary bladder wall: a case report and literature review

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Abstract

Migration and embedding of an intrauterine contraceptive device (IUCD) in the urinary bladder wall is rare. We present such a case of a 30-year-old woman with complaints of persistent lower urinary tract symptoms and a history of IUCD placement 8 years earlier. The IUCD was successfully removed with cystoscopy alone. The patient recovered well and had her second baby after the surgery without complaints of new urinary symptoms.

Keywords

Urinary bladder, intrauterine contraceptive device, cystoscopy, laparoscopy, lower urinary tract, pregnancy

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Introduction

Intrauterine contraceptive devices (IUCD) are among the most popular and effective contraceptive methods worldwide. However, complications may include bleeding, contraception failure, pelvic and abdominal infection, and uterine and adjacent organ perforation.^{1–3} Migration of an IUCD with it subsequently totally embedded in the bladder wall is rare, with only isolated cases reported. This complication sometimes mimics a chronic urinary tract

infection; however, it is generally refractory to antibiotics. Treatment options vary depending on the location of the ectopic

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IUCD in the bladder, and endoscopic procedures and laparoscopic surgery are considered the least invasive approaches.⁴ We describe a case of a translocated IUCD removed solely by cystoscopy in a patient who presented with persistent lower urinary tract symptoms.

Case report

A 30-year-old woman, gravida 1, para 1, presented to our outpatient clinic with a 10-month history of micturition pain and occasional gross hematuria. Her medical history was unremarkable except for an IUCD insertion after her first childbirth 8 years earlier. She had taken multiple courses of antibiotics for suspicion of urinary tract infection, but her symptoms did not resolve. Physical examination findings were negative, but ultrasonography revealed a T-shaped hyperechogenicity at the level of the urinary bladder dome, invading the bladder wall and slightly adhering to the adjacent intestines, causing suspicion that the migrated IUCD had been entirely separated from the uterus. Abdominal-pelvic radiography and computed tomography (CT) (Figure 1) confirmed these results.

Cystoscopy and laparoscopic exploration were subsequently scheduled under

general anesthesia. During cystoscopy, the shadow of the IUCD's long arm was visible on the bladder dome, embedded in the mucosal and muscular layers, with an associated small calculus (Figure 2a). Along with a linear lesion in the bladder, we briefly applied a bi-polar loop to the mucosa to provide cautery, and grasping forceps were simultaneously used to extract the device gently, with extreme caution to prevent the IUCD falling off the bladder dome into the abdomen. The T-shaped IUCD was then safely removed through the urethra (Figure 2b); thus laparoscopic surgery was unnecessary. A Foley catheter was placed in the bladder for 7 days, and the patient was discharged on postoperative day 8 without complications. One month after the IUCD removal, we confirmed the bladder wall repair using cystoscopy, and 2 years later, the patient had another baby girl without urinary symptom complaints.

Discussion

Translocation of an IUCD totally embedded in the bladder wall after uterine perforation is rare. Breastfeeding, proximity of the IUCD insertion to a recent delivery (up to 36 weeks), the experience and skill of the surgeon performing the insertion, history of cesarean delivery, and the position

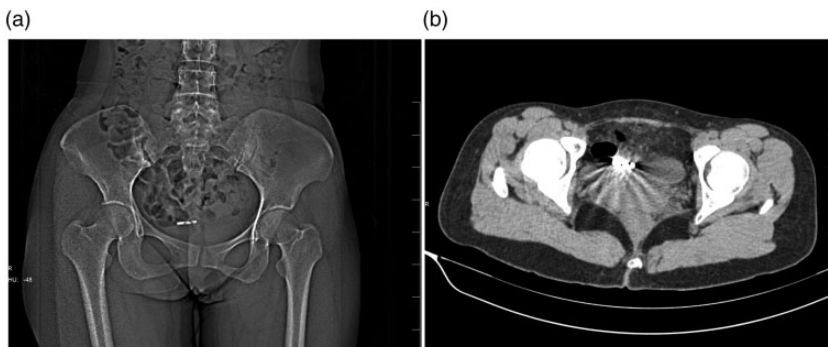


Figure 1. Imaging findings. (a) Abdominal-pelvic radiography and (b) computed tomography (CT) results confirmed the translocated IUCD.

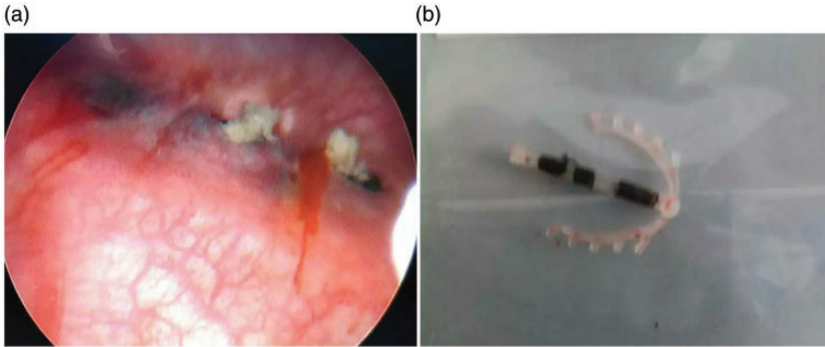


Figure 2. Intraoperative findings. (a) The shadow of the IUCD's long arm is visible on the bladder dome, embedded in the mucosal and muscular layers, with an associated small calculus. (b) The removed T-shaped IUCD.

of the uterus are associated risk factors for uterine perforation.³ It is not difficult to obtain the diagnosis of a displaced IUCD by adequate imaging examinations, such as ultrasonography, abdominal plain radiography, and CT, but chronic lower urinary tract symptoms in women with IUCDs should raise the suspicion of intravesicular migration.⁵ The vast majority of patients are recommended to undergo removal of the ectopic IUCD as soon as the diagnosis is made because of the associated risk of infection and adhesions without removal, and the possibility of complicating future surgery.^{5,6} However, a multicenter retrospective study reported that some asymptomatic patients, especially elderly women with comorbidities, could be better managed conservatively because surgery could also cause adhesions and complications.³

There are no standard surgical procedures to address this condition. Minimally invasive operations, such as hysteroscopy, cystoscopy, laparoscopy, and their combinations, are optimal approaches to manage a displaced IUCD, with a good prognosis.³⁻⁶ The treatment options are highly associated with the location of the migrated IUCD. In the present case, the IUCD had become totally separated from the uterus and was embedded in the urinary bladder

wall, which raised the possibility of its removal with cystoscopy alone. However, if an IUCD migrates extravescially, open surgery with the cooperation of a urologist, gynecologist, and gastroenterologist is usually required.⁷

Some novel approaches have also been reported, with consistent results. Jin et al.⁴ innovatively performed partial cystectomy and removed an IUCD with the combination of a carbon dioxide cystoscope and laparoscopy. Niu et al.⁶ successfully removed an IUCD perforating the uterus and the bladder, using a transurethral nephroscope, minimizing the formation of a larger vesico-uterine fistula by decreasing the extent of trauma potentially created when extracting the IUCD. No postoperative complications were mentioned in these studies.

Conclusion

In women with persistent lower urinary tract symptoms, it is necessary to obtain a detailed gynecological history and to consider the possibility of IUCD translocation to the bladder. If surgery is required, therapeutic options should be considered cautiously preoperatively according to the type, shape, and accurate location of the

translocated IUCD. When encountering this condition, surgeons should choose an effective method with which they are most certain and familiar. Cystoscopic translocated IUCD removal can be considered an effective and safe minimally invasive approach to manage an ectopic IUCD in the urinary bladder. If cystoscopy fails, laparoscopic or open surgery are required.

Ethics statement

The study protocol was approved by the Medical Ethics Committee of West China Fourth Hospital of Sichuan University (number HXSJ-EC-2021012). Written informed consent was obtained from the patient participating in the study, and data were censored by the ethics committee.


Declaration of conflicting interest

The authors declare that there is no conflict of interest.

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