



The Migrated Intrauterine Contraceptive Device Presented as a Vesical Stone

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Intrauterine devices (IUDs) are one of the most popular reversible contraception methods. However, if an event related to them is unanticipated, or if they are not located when missing, it can be dangerous. We present a case of chronic lower abdomen pain and recurrent urinary tract infection ongoing for 1.5 years. Despite the patient undergoing laparoscopic uterine myomectomy, her symptoms had not improved. The patient visited a genitourinary clinic for lower urinary tract symptoms and accepted cystoscopy and electrohydraulic lithotomy. Incidentally, a part of an IUD was found in the calculus. This case highlights the need for careful diagnosis and for locating missing IUDs to avoid serious complications.

Key words: Case report, intrauterine contraceptive device, urinary tract infection, uterine myoma, vesical stone

INTRODUCTION

The intrauterine device (IUD), also known as intrauterine contraceptive device or coil, is a small, T-shaped birth control device that is inserted into a woman's uterus to prevent pregnancy; it is one of the methods of contraception in women. It is rare for a fragment of IUD to perforate the uterus and migrate to the bladder. Once the IUD enters the bladder, it is usually partially or completely corroded by calculus. Due to calculus formation, it is difficult to recognize a foreign body in the bladder, leading to misdiagnoses in certain cases. Here, we have reported an unusual case of bladder stones induced by a fragment of IUD.

CASE REPORT

A 50-year-old female without a history of renal stones presented with lower abdominal pain that had been progressing for 2 years. The patient had long-term symptoms, including dysuria, frequent urination, nocturia, and irritative symptoms. In addition, she had a repeated urinary tract infection (UTI) that was treated by a local medical doctor with antibiotics for 2 years in a clinic. Physical examination

revealed normal findings. Urinalysis revealed microscopic hematuria and pyuria. Therefore, further investigations were performed. *Escherichia coli* was identified as the causative pathogen for the last UTI. Plain radiography of the abdomen showed a calcified opacity measuring 2.2 cm in diameter at the minor pelvis [Figure 1]. Urological ultrasonography confirmed the presence of stones in the urinary bladder. Cystoscopy revealed a large stone in the bladder near the left ureteral orifice [Figure 2]. The patient visited a gynecological outpatient clinic as well. Transvaginal ultrasonography revealed a uterine myoma measuring 5 cm; therefore, a laparoscopic myomectomy was performed. However, the lower abdomen pain persisted. She was scheduled for cystoscopy and electrohydraulic lithotomy 3 months later. Abdominal computed tomography was performed before the operation. A large stone and a calcification point were noted in the bladder [Figure 3]. During the procedure, a stick-shaped foreign body in contact with the big bladder stone was observed. We used an electrohydraulic lithotripter to remove the stone, succeeding which the unknown stick revealed a perforated bladder [Figure 4]. We used grasping forceps to pull out the foreign body that was found to be a

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Figure 1: A 2.2-cm diameter opaque calculus in the bladder



Figure 2: A big stone in the bladder near the left ureteral orifice



Figure 3: Computer tomography reveals a big bladder stone and a calcification point contacted bladder

fragment of the IUD [Figure 4b], under the guidance of a cystoscope. Subsequently, a urethral catheter was placed

for 1 week. The patient's urinary tract symptoms and lower abdominal pain subsided, and she was asymptomatic at the 1-month follow-up.

DISCUSSION

Declaration of Since IUD is reversible for contraception that is widely used worldwide.¹ It has a high effect and low complication rate and has been used by >100 million women.² However, there are some risks associated with its use. The complications of IUD insertion include heavier and longer menses, lower abdomen pain, perforation, migration, expulsion, and infection. Migration and uterine perforation of the IUD are infrequent, but they are occasionally serious. The incidence of IUD perforation ranges from 1.6/1000 to 2.1/1000.³ Migration of the entire IUD or a part of it to other sites rarely occurs. The possible migration sites of the IUD are the bladder, fallopian tube, ovary, peritoneum, omentum, rectosigmoid colon, appendix, small intestine, colon, appendages, and veins.⁴ If IUD migrates to the bladder, erosion of the bladder and/or calculus formation in the bladder usually causes urination symptoms. Symptoms of intravesical foreign bodies are usually those of acute cystitis, including urinary frequency, dysuria, hematuria, and strangury.⁵ Some patients may present with swelling of the external genitalia, poor urinary stream, and urinary retention.⁶ Calculus gradually forms when the IUD migrates into the bladder. The migration of IUDs and perforations of the uterus occurs most often during insertion, most likely due to nonstandard surgery.⁶ The mechanism of uterine perforation due to migration or dislocation of the IUD is not yet fully understood. Risk factors for uterine perforation include insertion during the immediate postpartum period and breastfeeding, uterine position (anteverted or retroverted), and inexperience of the inserter.⁷

In our case, the IUD disappeared for 29 years, and her discomfort gradually presented in the last 2 years. She had undergone IUD insertion immediately after the postpartum and breastfeeding period. She had many risk factors for the loss of IUD function. Due to her pregnancy that occurred in the same year of IUD insertion, we could speculate that the IUD had become dysfunctional or dislocated.

It is unclear if laparoscopic myomectomies are performed in these cases. Her symptoms were similar to bulk-related symptoms of uterine fibroids, such as pelvic discomfort, frequency, and difficulty emptying the bladder.⁸ Hence, surgery was indicated. However, she also had recurrent UTIs with obvious evidence. The diagnosis of uterine fibroids cannot

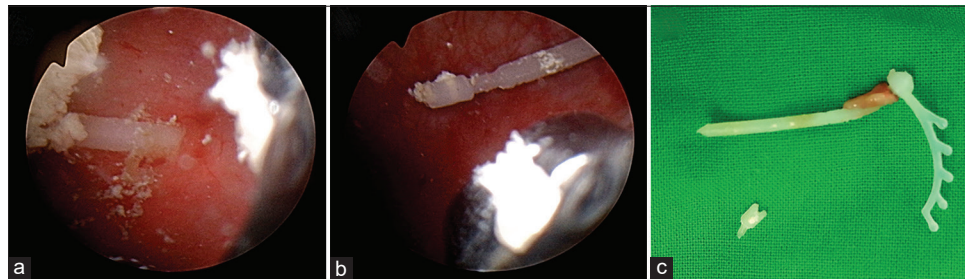


Figure 4: (a) A stick contacted the big bladder stone. (b) An unknown stick foreign body was found under a cystoscope. (c) A fragment of IUD was removed from the bladder. IUD = Intrauterine device

explain why she had recurrent UTIs. More evidence is needed to confirm whether myomectomy is a good choice to address all the problems. She could also undergo electrohydraulic lithotripsy (EHL) with cystoscopy before myomectomy. EHL is a less invasive procedure than myomectomy and may cure UTI.

Plain radiography, sonography, and cystoscopy are standard methods for diagnosing and evaluating foreign bodies in the bladder, while computed tomography and magnetic resonance imaging are useful in certain situations.⁹ However, in our case, even if advanced imaging studies were performed, the calculus formation was too dense to determine whether there was a foreign body in the stone. This condition also makes her undergo an unrequired operation.

In our case, the patient developed chronic lower abdominal pain and recurrent UTI, which were not alleviated by antibiotics and pain killers. Therefore, the foreign bodies and calculus had to be removed. The treatment options for IUDs that migrate into the bladder vary, and endoscopic techniques or suprapubic cystostomy may be useful in case of calculus formation. EHL with cystoscopy is a safe procedure to fragment urinary stones with a high success rate and has no major complications.¹⁰

CONCLUSION

Recurrent UTI should need further investigation. Especially, gynecological history should be checked for a female. A history of IUD placement is an important point for an unknown foreign body calculus formation. Iatrogenic foreign body should be traced as soon as possible to prevent other unexpected complication. A complete survey is very important before an invasive treatment.

Ethical approval

The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Institutional Review Board (or Ethics Committee) of TSGH (protocol code C202105198 and date of approval).

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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