

Intrauterine Contraceptive Device Migrated in Ureter, Bladder and Peritoneal Cavity: 3 Cases Report

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Abstract

Intrauterine contraceptive device (IUD) translocated outside the uterus was rarely reported, it was asymptomatic usually and lead serious complications. We present 3 cases of IUD migration which translocated into the ureter, bladder and peritoneal cavity.

Keywords: IUD migration; Ureter; Bladder; Peritoneal cavity

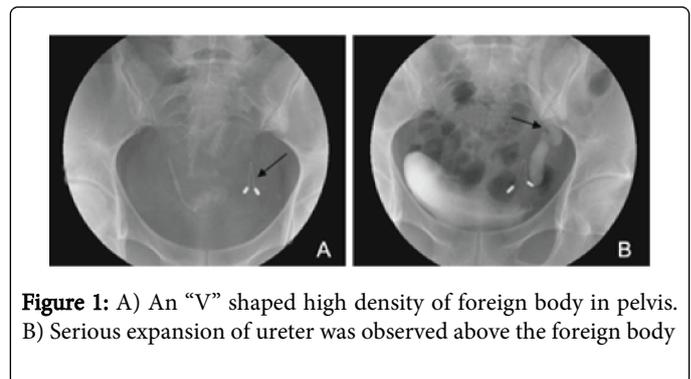
Introduction

Intrauterine contraceptive device (IUD) is commonly used in birth control. Migration to other organs or cavity near the uterus is an infrequent but serious complication of IUD. IUD migration in the adjacent organs of uterus usually, however, migration to the peritoneum, omentum, appendix were also reported in the literature [1-5]. It can lead uterine perforation, undesired pregnancy, pelvic inflammation disease, bowel perforation, vesicouterine fistula, abortion and infection [5]. The authors here are reporting 3 cases of IUD migration which translocated into the ureter, bladder and peritoneal cavity respectively. All of them were retrieved successfully by Minimally Invasive Surgery.

Case 1

A 39-year-old woman was admitted to our department complained with a 3-day history of left waist and abdomen paroxysmal pain cramps, it accompany with radiating pain of perineum. The patient's medical history indicated that an IUD had been inserted 12 years ago. Unexpectedly, she had become pregnant 2 years later, but aborted. The IUD had not been found, and it was assumed that it had fallen out. Urinalysis revealed the presence of inflammation, but a urine culture remained sterile. In ultrasonography, the position of the uterus was anteverted and anteflexed, left ureter expansion and left kidney seep were detected. A plain abdominal radiograph showed the presence in the pelvis of a stone opacity around the IUD (Figure 1A). Because of the ureter expansion and uronephrosis, an Intraudio Videoenous Urography (IVU) was established, it showed an "V" shaped high density of foreign body embedded in the ureter and a serious uronephrosis and ureter expansion were observed above the foreign body (Figure 1B). Ureterscopy employed subsequently, an "V" shaped foreign body embedded in the left lower ureter, which was about 10 cm from the ureteral orifice. One branch of the foreign body suspended in the ureter and calculus adhesive on its surface were observed. The other branch embedded into the wall of ureter, neof ormation caused a relatively stricture in this place. Pneumatic ballistic lithotripsy under ureterscopy and endoureterotomy was used. The foreign body retrieved successfully and it was a

contraceptive ring. Ureteral stent implanted 8 weeks and the patient has no complications.



Case 2

A 25-year-old female patient presented with complaints of urinary frequency, Interrupt urination, hematuria and painful urination. There was no history of fever. Past history of the patient revealed that she had insertion of an intrauterine device 2 years ago. Abdominal examination revealed tenderness on deep palpation over the suprapubic region. Per vaginal examination did not reveal any abnormality. Hematological investigations were within the normal limits. Urine examination revealed abundant pus cells and microscopic hematuria. IVU and CT revealed 2 approximately 2.5 cm calculus in the region of the bladder. The two calculus adhere to a high density foreign body. Two limbs of the foreign body were seen connected and embedded into the bladder wall (Figure 2A, 2B). USG examination confirmed the presence of the calculus in the bladder which was fixed as it did not exhibit any mobility within the bladder. The patient was given a course of urinary antibiotics to control the infection and then subjected to surgery. A preliminary cystoscopic examination was performed. It was observed that the stone were adhesive with the limbs of the IUD and the IUD fixed to the postero superior wall of the bladder. A cystoscope pneumatic ballistic lithotripsy was performed to remove the stone and the IUD was retrieved by laparoscope (Figure 2C). Foley catheter was placed 2 weeks and postoperative recovery was uneventful.

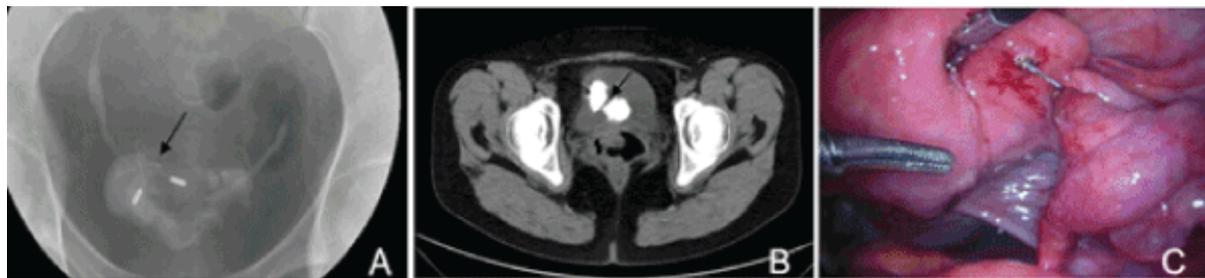


Figure 2: A) An “V” shaped high density of foreign body embedded in the bladder. B) Two calculus surrounded foreign body. C) Foreign body was retrieved by laparoscope.

Case 3

A 41-year-old woman was referred to urology department for serious right hydronephrosis. The patient was asymptomatic and the hydronephrosis was discovered by ultrasonography in the routine examination after half year of lymphoma chemotherapy. Past history of the patient revealed that she had pregnancy and abortion after 2 year of the IUD insertion. Abdominal examination revealed tenderness on deep palpation around lower right abdomen. Intravenous pyelography showed that an stricture on the right lower of ureter, the ureter expanded above the stricture and serious

hydronephrosis was observed (Figure 3A). CT examination revealed an about 2.5 cm in length in lower right abdomen which suggestive of the IUD (Figure 3B). An ureteroscopy was performed to chop the stricture on the right lower of ureter and laparoscope was performed to move the IUD in lower right abdomen (Figure 3C). It was showed in the surgery that the IUD was surrounded by loose connective tissue and new inflammatory creatures surrounded which about 3 cm from ureter, the ureter was pulled and caused the stricture of it. The surgery retrieved the IUD successfully and implanted an ureteral stent for 8 weeks. The patient recovered well.

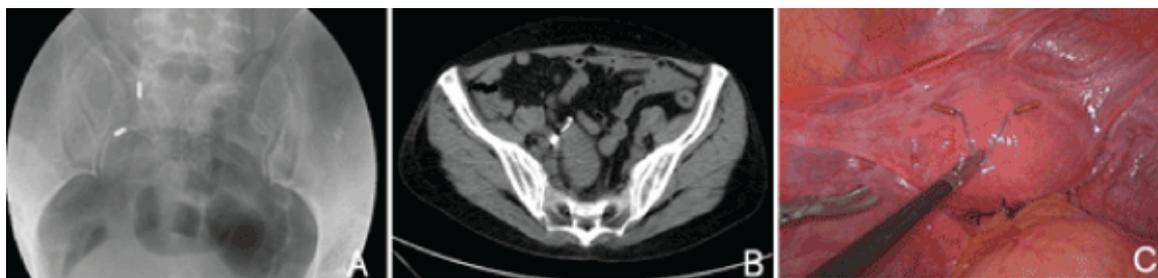


Figure 3: A) An “V” shaped high density of foreign body embedded in pelvis. B) The IUD was present a high density in CT. C) The IUD retrieved successfully

Discussion

Intrauterine contraceptive device (IUD) is commonly used in birth control. However, it can lead to complications. Such as penetration of the uterine, migrate to adjacent organs, undesired pregnancy, abortion, infection, and chronic pelvic pain [1]. Incidence of uterine perforation caused by IUD ranges from 1 to 2 per 1000 insertions reported in related literature [2,3]. As the perforation of IUD was asymptomatic usually, the true incidence of it may higher than reported. IUD migrates to the adjacent structure including urinary bladder, bowel, omentum and retroperitoneum. However, migration to peritoneum, appendix and colon were also reported in the literature [4]. The mechanism of uterine perforation and migration of the IUD is still not entirely known. Factors affecting IUD migration including size of uterine, the position of the uterine, time of the insertion [5]. It becomes more susceptible in atrophy and thinning of the uterine wall, lactation and postpartum period, strong uterine contractions, congenital uterine anomalies and previous Cesarean section history [6]. Besides, Spontaneous contractions of uterine, bladder contractions and bowel peristalsis may be other physiological mechanisms that

cause spontaneous migration of the IUD [7]. It is reported that IUD placement by specialists is very important in preventing perforation [8].

Uterine perforation due to IUD is asymptomatic frequently. Symptoms are different according to the location of the IUD, the commonly Symptoms including chronic pelvic pain, osphalgia, microscopic hematuria, caculi, recurrent and persistent urinary tract infection, vaginal infections, fistula, dysuresia, suprapubic pain [9]. The history of IUD insertion, failure to locate its threads and the presence of these symptoms are indication of IUD dislocation [10]. In this report, 3 patients were all came to urology department, one was asymptomatic and the routine examination discovered serious right hydronephrosis, the other two patients were complaining of urinary irritation and urinary tract obstruction symptoms. Bladder was one of the most commonly organs that the IUD migrated to ,about 100 cases was reported in related literature but IUD embedded into ureter haven't been reported previously.

The diagnosis methods of migrated IUD are radiography, ultrasonography, intravenous urography, CT, cystoscopy, Colonoscopy, hysteroscopy and ureteroscopy [8]. When IUD migrated in the urinary system, calculus formation on the surface of IUD observed usually. CT was the most effective image diagnosis method. Once migration of IUD was confirmed, removal of migrating IUDs is recommended irrespective of their type and location [11]. Minimally invasive techniques are suggested. Endoscopic techniques such as colonoscopy, hysteroscopy, cystoscopy and ureteroscopy not only are diagnosis methods but also good options for treatment [12]. In our cases, the IUD embedded in the ureter was removed by ureteroscopy, the other two cases was removed by laparoscope. A review revealed that 93% of the reported cases who had surgery attempted laparoscopically [13], but cases of both abdominal and pelvic organ perforations have the open surgery rate of 57.1% [14]. In conclusion, minimally-invasive methods, such as laparoscopy or endoscopy, are standard approach for removal of migrated IUD. When patients failed with these methods, an open operation was necessary.

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