

Vesical Lithiasis on an Intrauterine Contraceptive Device That Migrated Into the Bladder: About Two Cases

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Abstract

Case Report

The use of an Intrauterine Device (IUD) is the most economical form of contraception in the world, but it has some complications. Intra-vesical migration of IUD and the formation of stones are a rare complication. It can cause symptoms of the lower urinary tract. Imaging is crucial for diagnosis. Endourological management is the preferred option because the success rate is high with minimal morbidity. We present the management of two cases of intrauterine device migration forming an intra-vesical calculus with dysuria, suprapubic pain and hematuria.

Keyword: Intrauterine Device (IUD), Contraception, Intra-vesical migration, Endourological management.

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INTRODUCTION

Contraception has become a global concern over the past five decades due to the rapid increase in the human population [1]. The most popular method of reversible and cost-effective contraception is the intrauterine device (IUD). Uterine perforation during insertion is an uncommon complication of IUD and its incidence ranges from 0 to 1.6/1000 insertions [2]. Uterine perforation and intra-vesical migration are extremely rare [2]. However, once the IUD has entered the bladder, it usually becomes encrusted causing secondarily the formation of stones with the onset of symptoms of the lower urinary tract [3]. We therefore present the management of two cases of intrauterine device migration forming an intra vesical calculus revealed by urinary disorders of the lower apparatus.

Patiente 1

Fifty-year-old woman, multiparous, without any particular pathological history, she states that she had an IUD placed in a health centre by a midwife one year after her birth by the low way. The woman had been consulting in our ward for hypogastric pain for six months, with pollakiuria, burning of urination without fever. An x-ray kidney, ureter, bladder was prescribed with an ultrasound and an abdominal CT (Fig 1), which showed an IUD surrounded by stones and glued to the wall of the bladder, a Fragmentation of the calculation was performed by laser YAG Holmium, followed by

transcervical removal of the IUD using a pointed coagulation loop to release the remaining part attached to the bladder wall (Fig 2), the IUD was extracted from the entire bladder (Fig 3) And the patient was tested with a Charrière 16 bladder probe. Post-operative follow-up was uncomplicated

The IUD was almost completely inside the bladder and adhered to only a small area. When the IUD was removed, there was no clear vesical perforation, but a small vesical hollow corresponding to the trace of electrical coagulation and the IUD's nest. The catheter was left in place for three weeks. The scarring was noted clinically, after the removal of the catheter, the woman had no pain, hematuria or burning of the urine. Control cystoscopy at two months was normal.



Figure 1: Abdominopelvic scanner showing IUD



Figure 2: Per-operative image showing calcified IUD



Figure 3: Extraction of DIU and fragments of lithiasis

Patiente 2

A 42-year-old multiparous woman came for a consultation for the management of symptoms of the lower urinary tract made of dysuria and pollakiuria associated with an intermittent terminal hematuria evolving for 10 months. She had an intrauterine contraceptive device placed 14 years before her presentation. The physical examination was without particularity. Abdominal ultrasound and AUSP had an objective of a 13 mm calculation along the bladder dome (Fig 4) and in abdominal pelvic CT an intrapelvic macrolithiasis 17*16mm vesical and 1290 HU density and at the right iliac pit of a spontaneously hyperdense linear material coming into contact with the vesical wall, measuring 38*5mm. The indication of Laser fragmentation was given. During the exploration, a piece of the intrauterine contraceptive device in the form of a calcified rod was noted that had migrated and

was impacted at the level of the bladder dome (Fig 5). The calculation was fragmented using a Holmium YAG laser fiber. A piece of the intrauterine contraceptive device and the fragments were recovered with an endoscopic gripper (Fig 6). The following operations were without particularity with the control AUSP a metal end in extravesimal (Fig 7). The patient was then referred to the gynecology department for additional management.



Figure 4: AUSP in pre-operative showing intravesical lithiasis



Figure 5: Per-operative image showing a piece of IUD embedded in vesical lithiasis



Figure 6: Extraction of the IUD tip



Figure 7: AUSP post-operative after fragmentation of lithiasis showing an extra-vesical metal tip

DISCUSSION

A rare complication of IUCD is its migration to structures near the uterus or into the peritoneal cavity, although the IUD has a low complication rate. Bladder perforation by an IUD was rarely diagnosed because of its rarity [1]. The fragility of the uterine wall due to pregnancy, recent birth or abortion is the cause of IUD migration into the bladder [4]. These migrations can be overlooked assuming the device has fallen [1, 5].

The presence of foreign bodies in the bladder light can lead to the development of stones [4]. Intra-vesical migration of an IUD also causes calcium precipitation on the metallic parts of the device, which is followed by computational formation in a short period [1, 4]. The copper contained in some IUD may trigger an inflammatory reaction resulting in a contraceptive effect, but it may also be involved in the process of perforation and long-term uterine transmigration [6].

Total or partial bladder migration is usually seen as symptoms of the lower urinary tract (pollakiuria, dysuria, hematuria) associated with suprapubic pain and repeated urinary tract infections [3, 7]. Persistent or recurrent urinary tract infections are the most common presentation, the diagnosis of intra vesical calculus being a discovery during the diagnostic assessment [3]. Both patients in this series exhibited recurrent symptoms of the lower urinary tract. Both patients had pollakiuria and dysuria. The second patient had intermittent hematuria. The actual cause of IUD migration in the two patients was not determined, as none of these women had a pregnancy or caesarean section after insertion, which are major risk factors. What was evident to both patients was the use of a copper T-shaped intrauterine contraceptive device that may cause an inflammatory reaction according to De Silva *et al.*, [6]. The seat could be explained by the proximity between the vesical dome and the uterine body and that in a state of repair the vesical wall thins.

All IUDs are radio-opaque; therefore, a simple pelvic X-ray can be used for IUD detection [8]. Ultrasound is a sensitive diagnostic tool for bladder disease and IUD loss [8]. However, in cases of partial migration, the uroscanner is very effective in demonstrating the relationships between the IUD and adjacent structures and allows us to assess other possible causes of symptoms in the lower urinary tract [9]. In both of our patients, the diagnosis of migrating and calcified IUD in the bladder was made during exploration.

Treatment options for IUDs migrating into the bladder vary [9]. Endourological management is the preferred approach because of its high success rate and lower morbidity [9]. Cystoscopic removal of the device and stones is the preferred approach for removing intra-vesical foreign matter completely inside the bladder or for IUDs with small stone formation [9]. A lithotripsy of the vesical calculations may be required before extractions in large calculations [10].

CONCLUSION

The use of an intrauterine device (IUD) is the most economical form of contraception in the world, but it has some complications. Intra-vesical migration of IUCD and the formation of stones are a rare complication that can lead to the appearance of symptoms of the lower urinary tract. Imaging is crucial

for diagnosis. Endourological management is the preferred option because the success rate is high with less morbidity.

REFERENCES

1. Verim, L., Akbas, A. L. P. A. S. L. A. N., & Erdem, M. (2015). Intravesical Migration and Calcification of Intrauterin Device: A Case Report and Review of the Literature. *Journal of Urological Surgery*, 2(4), 197-199.
2. Aggarwal, S., Jindal, R. P., & Deep, A. (2014). Intravesical migration of intrauterine contraceptive devices with stone formation. *Journal of family medicine and primary care*, 3(4), 449.
3. Sataa, S., Sami, B. R., KARIM, C., & Horchani, A. (2011). Bladder calculus resulting from the migration of an intrauterine contraceptive device: A report of ten cases. *Int J Nephrol Urol*, 3, 54-61.
4. Istanbuluoglu, M. O., Ozcimen, E. E., Ozturk, B., Uckuyu, A., Cicek, T., & Gonen, M. (2008). Bladder perforation related to intrauterine device. *Journal of the Chinese Medical Association*, 71(4), 207-209.
5. Tosun, M., Celik, H., Yavuz, E., & Cetinkaya, M. B. (2010). In- travesical migration of an intrauterine device detected in a pregnant woman. *Can Urol Assoc J*, 4, 141-143.
6. De Silva, W. S. L., Kodithuwakku, K. A. S. U. A., Aponsu, G. U. E., Rathnayake, R. M. M., & Rajasegaram, E. (2017). A large bladder stone caused by the intravesical migration of an intrauterine contraceptive device: a case report. *Journal of Medical Case Reports*, 11(1), 1-4.
7. Yalçın, V., Demirkesen, O., Alıcı, B., Önel, B., & Solok, V. (1998). An unusual presentation of a foreign body in the urinary bladder: a migrant intrauterine device. *Urologia internationalis*, 61(4), 240-242.
8. Ghanem, M. A., Sultan, S. M., Ghanem, A. A., & Zanaty, F. M. (2013). Double intravesical migration of intrauterine device: presented with vesical stone formation. *World Journal of Nephrology and Urology*, 2(2), 79-81.
9. El-Hefnawy, A. S., El-Nahas, A. R., Osman, Y., & Bazeed, M. A. (2008). Urinary complications of migrated intrauterine contraceptive device. *International Urogynecology Journal*, 19(2), 241-245.
10. Tosun, M., Celik, H., Yavuz, E., & Cetinkaya, M. B. (2010). Intravesical migration of an intrauterine device de- tected in a pregnant woman. *Can Urol Assoc J*, 4(5), E141-143.