

## Endourology

## Intravesical migration of intrauterine device resulting in stone formation: About a case report



Maroua Gharbi\*, Marouene Chakroun, Kays Chaker, Seif Mokadem, Haroun Ayed,  
Mohamed Chebil

Department of Urology, Charles Nicolle Hospital, Tunis, Tunisia

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## Introduction

Intrauterine device (IUD) is the most widely used method of reversible contraception because of its high efficiency and low complication rate. The use of IUD may cause complications from slight discomfort to sepsis leading to death. However, transvesical migration or misplacement of an IUD is a very rare complication with a high ratio of stones formation.

## Case report

A 62-year-old woman was admitted to our institution presenting with intermittent severe lower abdominal pain, dysuria and intermittent hematuria for 6 months. She had a medical history of insertion of an IUD inserted 9 years ago. Physical examination at that time did not show any remarkable finding. Urinalysis was indicative of pyuria and hematuria and urine culture was negative. Gynecologic examination reported that there were no visible strings of an IUD and cervix was closed. A plain abdominal radiograph showed a 15-mm calcified mass in the pelvis overlying the Copper-T (Fig. 1). Abdominal ultrasonography revealed an echogenic intravesical lesion measuring about 15 mm with distal acoustic shadow suggestive of a foreign body or calculus. Cystoscopy revealed a large calculus at the end of the IUD wire that was penetrating the posterior wall of bladder and was fixed to the bladder wall, not lying free in the bladder (Fig. 2). So the patient underwent endoscopic surgery and the stone around the IUD was crushed using endoscopic ballistic lithotripsy. After complete disintegration and extraction of fragmented stones, the IUD was removed through the cystoscope using mechanical forceps (Fig. 3). The urethral catheter was

removed after 10 days. She was followed up for ten months, physical examination and urinalysis were normal.

## Discussion

Intrauterine device (IUD) is the most used birth control method, especially in developing countries. Considered as a foreign body, it may be responsible of numerous complications in case of bad observance. Gynecologic infections are the most common, but trans-uterine migration of IUD must always be suspected.<sup>1</sup> Trans-uterine migration is favored by local inflammation caused by IUD.<sup>2</sup> Perforation may occur long after the insertion due to myometrial fragility, exaggerated retro or anteversion, hypoplasia of the uterus, and early implantation in post-partum. Uterine perforation always precedes migration to neighboring organs. Intra-myometrial migration corresponds to the beginning of the incarceration of an IUD branch in the myometrium. Local inflammation, associated to uterine contractions, enables the migration of IUD. An IUD migrates essentially into the peritoneal cavity (epiploon, broad ligament, Retzius space) and is more rarely intra-visceral (ovaries, appendages, rectum, sigmoid colon, appendix, bladder) or exceptionally intra-vascular (stenosis of the iliac vein) or in subcutaneous fat. In case of intra-vesical migration, the patient may be asymptomatic or may have irritative symptoms of the lower urinary tract, terminal hematuria or pelvic pain.<sup>3</sup> X-ray of urinary tract shows an IUD localized outside the projection area of the uterus.<sup>3</sup> An intra-vesical IUD can be calcified: it is embedded in a calcium tone opacity.<sup>3</sup> Pelvic ultrasound can usually locate the IUD. Endo-vaginal ultrasound is more efficient for uterine exploration.<sup>4</sup> In the case of IUD completely encompassed by the calculation, its absence in the uterus associated with urinary signs and

\* Corresponding author.

E-mail address: [marouagharg@gmail.com](mailto:marouagharg@gmail.com) (M. Gharbi).

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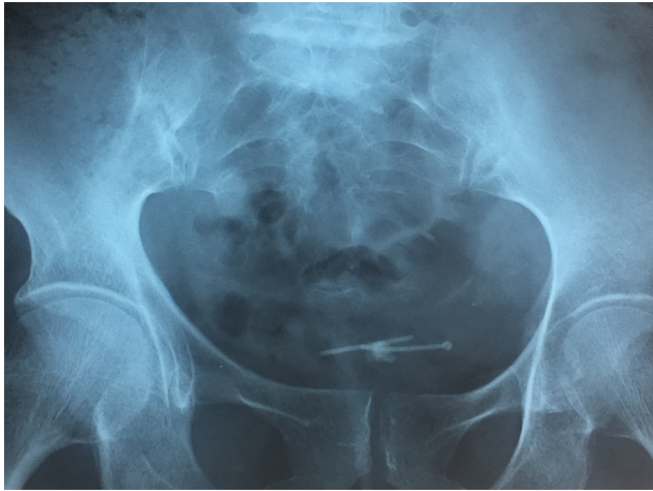


Fig. 1. Plain abdominal radiograph showing a 15-mm stone in the pelvis overlying a Copper-T.



Fig. 2. Cystoscopy showed a large calculus at the end of the IUD wire that was penetrating the posterior wall of bladder and was fixed to the bladder wall.

bladder stones on the X-ray of urinary tract allow to confirm the diagnosis.<sup>1</sup> Cystoscopy is the most reliable diagnostic method. IUD extraction can be endoscopic or by surgical incision of the bladder.<sup>5</sup>

### Conclusion

The intrauterine contraceptive device remains one of the safest and highly effective methods of contraception even if some complications occur during its use. It is advisable to check the IUD location in patients using this method of contraception.



Fig. 3. Intrauterine device (IUD) removing after endoscopic ballistic lithotripsy.

### Conflicts of interest

The authors declare that there is no conflict of interests.

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