Intrauterine contraceptive devices (IUCD) have been associated with the multitude of complications. We present a rare case report of a 30-year-old female in whom the IUCD (Cu-T) migrated into the urinary bladder leading to calculus formation. The migrated IUCD encrusted with stones was successfully retrieved.

**Keywords:** Intrauterine contraceptive devices, uterine perforation, vesical calculus

**Abstract**

Intrauterine contraceptive devices (IUCD) have been associated with the multitude of complications. We present a rare case report of a 30-year-old female in whom the IUCD (Cu-T) migrated into the urinary bladder leading to calculus formation. The migrated IUCD encrusted with stones was successfully retrieved.

**Case Report**

A 30-year-old female gravida 4, para 3 came to the gynaecology outpatient department with 11/2 months history of pain in suprapubic region with severe dysuria. She also gave a history of off and on suprapubic pain from last 4 years. Patient had amenorrhea of 11/2 months for which she had taken Medical Termination pill and now she had bleeding per vaginum. She had undergone ultrasonography to rule out retained products, which revealed dense acoustic shadows in the urinary bladder s/o calculus [Figures 1 and 2]. Uterus and ovaries were unremarkable. Further X-ray kidneys, ureters, and bladder (KUB) was done, which revealed a Copper-T (Cu-T) in the pelvic region with fine radio opacities along the margins of Cu-T thereby suggesting an intravesical Cu-T (manufacturer detail not known) [Figure 3]. Magnetic resonance examination revealed Cu-T in the urinary bladder. There was no fistulous tract between the uterus and urinary bladder. Fat planes between the urinary bladder and uterus were maintained. Cervix and vagina were unremarkable [Figure 4a and b]. Her medical history revealed insertion of Cu-T 5 years back, but was not aware of its expulsion.

Cystoscopy revealed an impacted T-shaped device encrusted with yellowish material within the urinary bladder, which could not be removed cystoscopically. Hence, cystostomy was done and IUCD was removed [Figure 5]. Postoperative period was uneventful and the patient was discharged in a satisfactory condition.

**Discussion**

Intrauterine contraceptive devices is the most popular method of reversible contraception due to its high efficacy for fertility regulation, low-risk, and low-cost.\(^8\) Complications with IUCDs remain rare. These include spontaneous abortion, pelvic inflammatory disease (PID), uterine perforation, heavy bleeding, dysmenorrhea, and unplanned pregnancy. The rate of spontaneous abortion is doubled. The risk of PID is increased 10-13% with IUCD *in situ.*
The rate of uterine perforation has been estimated between 0 and 1.60/10,000 insertions. The pathogenesis of uterine perforation of IUCD may occur by two mechanisms. First, uterine perforation can occur at the time of insertion, especially when associated with severe abdominal pain.\[3,6,7\] Second, proposed mechanism of perforation is by a gradual pressure necrosis of the uterine wall by IUCD (likely at its lead point) with essential migration out of the uterus. Migration and perforation may or may not be facilitated by uterine contractions.\[3,7\] About 80% of uterine perforation are free in the peritoneal cavity. IUCD migration into adjacent organs leads to bowel obstruction, perforation peritoneal, appendicitis, vesical calculus formation, obstructive nephropathy, fistula formation, menouria and intra peritoneal adhesions leading to infertility.\[3,8,9\]

In 1992, Dietrich reported eight cases of intravesical IUCD migration with development of urinary symptoms as early as 3 months to as late as 5 years after insertion.\[1\] Our patient was also having off and on suprapubic pain with dysuria for last 4 years. These urinary symptoms are related to migration of IUCD into the urinary bladder. The presence of IUCD in bladder leads to calculus formation overtime. The degree of stone formation is variable and independent of the duration in the bladder.\[2,9\]

The device can either be partially or completely encrusted with calculi.\[2\] In our patient, there was complete encrustation of the device. It has also been suggested that pregnancy helps in erosion of the uterine wall with IUCD and therefore secondary
perforation is considered to be the most likelihood mechanism.[3]
Our data supports this hypothesis as pregnancy had occurred 
after insertion of IUCD.

Sonography with transabdominal and transvaginal is a useful method 
to detect IUCD migration as well as encrustation of calculi, which 
can be well-diagnosed by the presence of calculus in plain X-ray 
KUB. In our case also the IUCD showed encrustation which was 
seen as fine calcification on plain X-ray. Computed tomography scan 
is also a very effective imaging modality in demonstrating IUCD 
relation with adjacent structures. Magnetic resonance image further 
delineates fistulous tracts between the uterine and urinary bladder.

Treatment option for IUCD removal varies. Cystoscopic 
 extraction of the device and stones is preferred as there is less 
morbidity with high success rate.[2] However, in our case, the 
removal was not possible cystoscopically, and cystostomy was 
performed for removal of IUCD. Lithotripsy of bladder stones 
may be required preceding the extractions in large stones.[6]

**Conclusion**

Chronic pelvic pain and dysfunctional voiding symptoms with a 
history of an unretrieved IUCD must be carefully researched for 
possible perforation of the uterus with intravesical migration of 
IUCD. Any displaced IUCD should be removed due to potential 
complications.

**References**

1. Dietrick DD, Issa MM, Kabalin JN, Bassett JB. Intravesical 
migration of intrauterine device. J Urol 1992;147:132-4.
2. Ghanem MA, Sultan SM, Ghanem AA, Zantay FM. Double 
Intravesical Migration of Intrauterine Device: Presented With Vesical Stone Formation.
3. Gillis E, Chhiv N, Kang S, Sayegh R, Lotfipour S. Case of 
urethral foreign body; IUD perforation of the bladder with 
calculus formation. Cal J Emerg Med 2006;7:47-53.
4. Ozgür A, Sismanoglu A, Yazici C, Cosar E, Tezen D, Ilker Y. 
Intravesical stone formation on intrauterine contraceptive 
device. Int Urol Nephrol 2004;36:345-8.
5. Sataa S, Sami BR, Sabeur R, Karim C, Ali H. Bladder 
calculus resulting from the migration of an intrauterine 
contraceptive device: A report of ten cases. Int J Nephrol 
Urol 2011;3:54-61.
6. Tosun M, Celik H, Yavuz E, Cetinkaya MB. Intravesical 
migration of an intrauterine device detected in a pregnant 
woman. Can Urol Assoc J 2010;4:E141-3.
7. Caspi B, Rabinerson D, Appelman Z, Kaplan B. Penetration 
of the bladder by a perforating intrauterine contraceptive 
device: A sonographic diagnosis. Ultrasound Obstet Gynecol 
1996;7:458-60.
8. Zakin D, Stern WZ, Rosenblatt R. Complete and partial 
uterine perforation and embedding following insertion of 
intrauterine devices. I. Classification, complications, 
mechanism, incidence, and missing string. Obstet Gynecol 
Surv 1981;36:335-53.
9. Timonen H, Kurppa K. IUD perforation leading to 
obstructive nephropathy necessitating nephrectomy: A rare 
complication. Adv Contracept 1987;3:71-5.

**How to cite this article:** Aggarwal S, Jindal RP, Deep A. Intravesical 
migration of intrauterine contraceptive devices with stone formation. 
J Fam Med Primary Care 2014;3:449-51.

**Source of Support:** Nil. **Conflict of Interest:** None declared.