

Intravesical Migration of the Longest Forgotten Intrauterine Contraceptive Device with Secondary Vesicolithiasis in a 70-Year-Old Female: A Rare Case Report

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ABSTRACT

Intrauterine Contraceptive Device (IUCD) is the most common method of contraception due to its low cost and reversibility. Longstanding IUCD's can cause complications like menorrhagia, chronic pelvic pain, perforation of uterus and migration into adjacent structures as pouch of douglas, rectum or bladder. The Copper T acts as a foreign body and its presence for a long time causes secondary stone formation in bladder. Most of the cases in literature have been managed with open surgery. The author reports a case of a 70-year-old female presenting with transmigration of a forgotten Copper T into bladder with secondary calculus formation. The unique features of the presented case were the age of the patient, the longest duration of the forgotten Copper T (31 years) and the successful removal of both the calculi and Copper T device using an endoscopic approach.

Keywords: Bladder calculus, Copper T, Foreign body

CASE REPORT

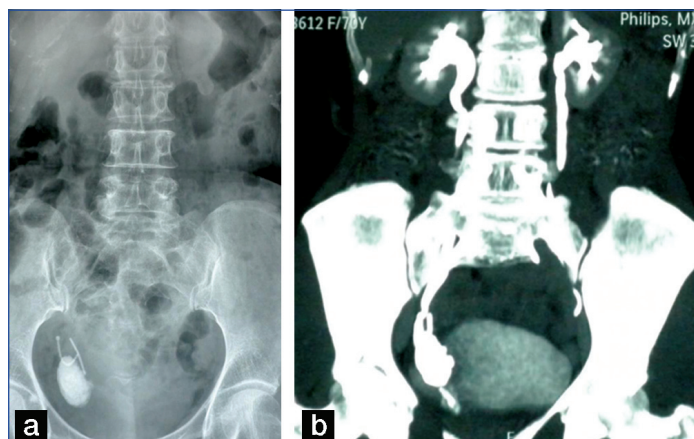
A 70-year-old female (para gravida-4; living 3- abortion 2; IUCD-1) presented to Urology Outpatient Department with chief complaints of frequency of urine dysuria, sense of incomplete emptying of bladder, lower abdominal pain and occasional haematuria for one month. There was a past history of Copper T insertion after three pregnancies, 31 years back, following which patient had failure of contraception and conceived one year after Copper T insertion. Antenatal period was uneventful with full term normal vaginal delivery following which patient had two spontaneous abortions at three months of pregnancy. Patient attained menopause 20 years back.

Abdominal, pelvic and genital examination was normal. Urine culture showed *Escherichia coli* organism which was treated by antibiotics. The ultrasonography suggested large 48×14 mm bladder calculus. Intravenous urography revealed a non mobile calculus along the right lateral wall of bladder with Copper T in the pelvis [Table/Fig-1]. Computed Tomography (CT) scan was performed to delineate the exact location of the bladder stone embedded with the Copper T and to observe the course of the right ureter [Table/Fig-1]. The Hounsfield unit of the stone was 950. Cystolithotripsy

was performed under spinal anaesthesia and the stone was fragmented with pneumatic lithotripter. Fragments were completely extracted at the end of the procedure. The Copper T once freed off from the stone was gently extracted with forceps through the endoscope sheath [Table/Fig-2]. The procedure was uneventful and the catheter was removed after 48 hours postoperatively and the patient was discharged.



[Table/Fig-2]: Endoscopically fragmented calculi with the intact Copper T along with its threads.



[Table/Fig-1]: a,b) Plain Kidney, Ureter, Bladder (KUB), Intravenous Pyelogram (IVP) and CT scan films showing the Copper T with bladder calculus at the right lateral wall of the bladder.

DISCUSSION

The IUCD is the most commonly used method for long-term contraception in females. Amongst which, Copper T is the most widely used IUCD in India having low complication rate [1]. The incidence of IUCD causing uterine perforation and extrauterine migration is around 1.2-1.6/1000 IUCD insertions [2].

The IUCD if not removed on time may cause complications like menorrhagia, pelvic pain and infection, uterine perforation and migration in the peritoneal cavity into the pouch of Douglas, perforating rectum, appendix and bladder causing bladder stone [1]. In case of migration of IUCD, majority of them perforate the

uterus while few get implanted in the omentum. There are reports in the literature which define the migration of Copper T in bladder with stone formation [3-5]. Due to the anteverted and anteflexed position, the uterus lies in close proximity to bladder with higher chances of migration to the bladder [3]. Long standing IUCD's can wander and also cause endometrial changes like interstitial haemorrhage in 72% and glandular hyperplasia in 6% of cases [4]. Copper T should be replaced or removed not later than four years from the date of insertion. The exact cause of migration of Copper T is not known. It can migrate due to uterine perforation or because of inflammatory reaction [2].

The IUCD migration in the bladder can be totally asymptomatic or can present with lower urinary tract symptoms. Once migrated in bladder, patient may present with urinary symptoms like dysuria, frequency, haematuria, retention of urine and fever due to infection. Calculus formation occurs after longer duration of migration of the IUCD in the bladder. If there is a history of disappearance of Copper T thread with urinary symptoms, a strong suspicion should be made of migrated Copper T with bladder calculus [5].

Patients may remain asymptomatic as reported by De Silva W et al., wherein the patient presented after 13 years of its insertion [6]. The longest forgotten period was for 25 years by Jamburaj A et al., and 22 years reported by Borkar TS et al., [1,5]. In the present case, the patient was asymptomatic for over 31 years which is the longest duration in literature. Longstanding foreign body in bladder can cause secondary stone formation. The majority of the patients with urinary symptoms are treated for urinary tract infections thereby delaying the diagnosis. Migration of IUCD should be suspected in cases of recurrent urinary tract infections. The diagnosis can be made on simple investigations like ultrasonography and Kidney, Ureter and Bladder (KUB) X-ray [3]. For better delineation of the Copper T and the bladder stone, CT scan is a preferred modality of investigation which would also help in deciding the suitable management options. The bladder stone composition over a foreign body is typically an inner core of calcium oxalate deposit and the majority bulk of the stone consisting of magnesium ammonium phosphate, due to infection [7]. Routine laboratory investigations might show leucocytosis and urine examinations might show pus cell or microscopic haematuria in cases of infection. For mobile stones endoscopic techniques would be helpful but for large stones which are attached to the viscera, open suprapubic cystolithotomy is advised [3]. Most of the cases of bladder stone along with Copper T were treated by open surgical approach in the literature [1,3]. Endoscopic extraction was done by

Sharma A et al., but in their case the bladder stone was small and mainly consisted of encrustation over the Copper T [8]. The removal was difficult in their case because the Copper T was embedded in the bladder wall and required cutting the threads by collings knife. In certain rare cases, due to pressure necrosis of the walls of uterus and bladder might cause erosions and formation of fistula between them. In such situations cystotomy might be required to repair the fistula [9]. In the present case, despite large, non mobile calculus, an endoscopic approach was planned by performing cystolithotripsy along with extraction of fully intact Copper T.

CONCLUSION(S)

Females with lower urinary tract symptoms with a past history of Copper T insertion should be assessed carefully as perforation and migration of IUCD is a known complication. Here, the role of obtaining a detailed past case history is crucial and females should be counseled thoroughly while inserting IUCD regarding its follow-up protocol. Patients with migrated Copper T can be completely asymptomatic for quite a long time as in the present case. Immobile bladder stone should raise a suspicion that it is probably formed on a foreign body. In females, migrated IUCD is one of the important causes of secondary bladder calculus formation.

REFERENCES

- [1] Jamburaj A, Darlington G, Chinnathambi J. An unusual cause of vesical calculi. *Cureus*. 2020;12(1):e6701.
- [2] Harrison-Woolrych M, Ashton J, Coulter G. Uterine perforation on uterine device insertion: Is the incidence higher than previously reported. *Contraception*. 2003;67:53-56.
- [3] Vagholkar S, Vagholkar K. Secondary vesical calculus resulting from migration of an intrauterine contraceptive device. *Case Rep Obstet Gynecol*. 2012;2012:603193.
- [4] Lee YB, Kim CS, Ro JY, Kwak HM, Song CH. Long term effects of IUD on Human Endometrium-Histologic, histochemical and ultrastructural studies. *Yonsei Medical Journal*. 1983;24(2):141-48.
- [5] Borkar TS, Deshmukh BM, Shrotri SK, Shrotri MS. Bladder calculus secondary to migrated intra-uterine contraceptive device. *J Obstet Gynaecol India*. 2013;63(2):140-41.
- [6] De Silva W, Kodithuwakku KA, Aponsu GU, Rathnayake RM, Rajasegaram E. A large bladder stone caused by the intravesical migration of an intrauterine contraceptive devices: a case report. *J Med Case Rep*. 2017;11(1):293.
- [7] McDougal WS, Wein AJ, Kavoussi LR, Partin AW, Craig A. *Campbell-Walsh Urology 11th Edition Review- Elsevier eBook on VitalSource, 2nd Edition*. 2016.
- [8] Sharma A, Andankar M, Pathak H. Intravesical migration of an intrauterine contraceptive device with secondary calculus formation. *Korean J Fam Med*. 2017;38:163-65.
- [9] El-Hefnawy AS, El-Nahas AR, Osman Y, Bazeed MA. Urinary complications of migrated intrauterine contraceptive device. *Int Urogynecol J Pelvic Floor Dysfunct*. 2008;19(2):241-45.

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