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CASE REPORT

Bladder Calculus Secondary to Migrated Intra-Uterine Contraceptive Device

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Introduction

Intrauterine contraceptive device (IUCD) is currently one of the most popular reversible contraception method used world wide. Since its introduction, many complications have been reported with IUCD which include dysmenorrhoea, menorrhagia, pelvic infection, pregnancy, uterine perforation and migration into adjacent organs [1]. Migration of the IUCD into the bladder has been rarely reported in the literature [2–4]. The authors report an unusual case of a secondary vesical calculus formed around a migrated IUCD found 22 years following insertion of IUCD.

Case Report

A 45-year-old female, para 2, live 2 (P2L2) presented to our outpatient services with history of recurrent urinary tract infections (UTI) for last 3 years. History revealed that she had her first pregnancy at the age of 23 years. After delivery, a T-type Copper T (CuT) was inserted by a private practitioner in her village. Four years later, she conceived again. She was told that her CuT had "fallen". No investigation was carried out at that time to locate the missing CuT. She had an uneventful vaginal delivery. Apart from the delivery, she had not undergone any uterine operation. In last 3 years, she had about 5 episodes of urinary tract infection for which she was prescribed antibiotics by a local doctor before being referred to our centre.

Urinalysis revealed moderate pyuria and microscopic haematuria. Urine culture was positive for P*roteus mirabilis*, sensitive to norfloxacin, cefoperazone-sulbactum, piperacillin-tazobactum and amikacin. Her blood tests were normal except for moderate leucocytosis (TLC—12,000/cmm). She was prescribed culture-based antibiotics. In view of recurrent UTI, plain X-ray of the urinary system and ultrasound was advised to rule out urinary tract stone. Plain X-ray of the urinary system showed a large radio-opaque stone in the bladder with CuT embedded within it (Fig. 1). USG abdomen confirmed the findings with a 5 × 3× 2.5 cm stone in the urinary bladder with CuT inside it.

The patient was operated by a open laparotomy approach and bladder stone was taken out along with the CuT embedded within it (Fig. 2). Patient had an uneventful post-operative course and was discharged on post-operative day 7. She was doing well at last follow-up 6 months after surgery.

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Fig. 1 Plain X ray of the pelvis showing a large radio-opaque bladder stone with CuT inside it

Fig. 2 Photograph of the clinical specimen showing the bladder stone with CuT embedded within it

Discussion

Intrauterine device is an accepted contraceptive method worldwide. Its complications include UTI, spontaneous abortion, and uterine perforation [5]. The incidence of IUD perforation ranges from 0.05/1,000 to 13/1,000 [6]. Migration of the IUCD into the neighboring organs or the abdominal cavity is a rare complication. This migration could be missed and mistaken as "fallen out" IUCD, as in our case [5].

Intravesical migration of IUCD with secondary calculus formation is an extremely rare complication of IUCD insertion [3–8]. To date, approximately 80 cases of IUD migration to the bladder have been reported in the literature, and about half of them resulted in stone formation, with stone sizes varying from 1 to 8 cm. The foreign material within the bladder, especially copper incorporated in a CuT, elicits an inflammatory reaction and acts as a nidus for stone formation. The infections constitute a separate predisposing factor [4].

Factors predisposing to uterine perforation following IUCD include insertion of the device by inexperienced persons, inappropriate position of the IUCD, susceptible uterine wall due to multiparity, and a recent abortion or pregnancy [5]. In addition, infection and tissue damage caused by the vaginal speculum used during IUCD placement can lead to adhesions and thus facilitate the perforation of the uterus [6]. The clinical appearance of uterine perforation and IUCD migration may be delayed and the condition may remain undiagnosed for several years, as in our case.

As majority of the bladder calculi are radio-opaque, they can be diagnosed by plain X ray of the urinary system, supplemented by ulltrasonography and CT scan. Treatment options include open laparotomy and removal, as also the minimally invasive techniques like cystoscopic removal aided by lithotriptor [6].

In conclusion, the present case highlights the importance of a simple X ray examination of the pelvis in case of a missed IUCD. Presence of recurrent UTI and lower urinary tract symptoms in a woman with a missed IUCD should raise the suspicion of migrated IUCD inside the bladder.

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