

Erosion of an Intrauterine Contraceptive Device through the Bladder Wall Causing Calculus: Management and Review of the Literature

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Key Words

Bladder stone · Bladder · Intrauterine contraceptive device

Abstract

Intrauterine contraceptive devices have been in use for more than 30 years. Although perforation of the uterus by an intrauterine device is not uncommon, intravesical migration with secondary stone formation is a rare complication. A 46-year-old woman is described in whom intravesical migration of the intrauterine device was complicated by bladder stone formation. Endoscopic management was applied with an excellent outcome.

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Introduction

Due to their efficiency and low cost, intrauterine contraceptive devices (IUCDs) are the most popular method of reversible contraception in developing countries [1]. However, IUCDs are often inserted by paramedics of variable skills, and follow-up evaluations are irregular or absent, which can be the source of major complications [2]. Herein we report a case of misplacement or migration of an IUCD to the bladder who presented with lower urinary tract symptoms (LUTS) and suprapubic discomfort.

Case Report

A 46-year-old woman in whom a copper T IUCD was inserted 12 years earlier presented with persistent LUTS and suprapubic pain. The patient became pregnant 2 years after placement of the IUCD, therefore another IUCD was placed after delivery. Due to LUTS and suprapubic pain, the last placed IUCD was removed, however the former one could not be removed. After persistent symptoms, the patient was referred to us. Radiologic evaluation, plain X-ray and computed tomography showed a vesical stone fixed to the urinary bladder. The patient underwent cystoscopy which demonstrated encrustation of 2–3 cm in volume over the eroded part of the IUCD which was successfully fragmented by pneumatic lithotripsy (fig. 1). After complete disintegration of the stone, the IUCD was extracted by mechanical forceps from the bladder wall and removed (fig. 2). The operative time was 20 min. The patient was discharged on the 1st postoperative day; the urethral catheter was removed on the 5th postoperative day. She was followed up for 3 months. At each control, urinalysis, gynecological examination, and subjective and objective complaints were within normal limits.

Discussion

The incidence of uterine perforation due to migration or misplacement of an IUCD is very low. In a literature review by Kassab and Audra [3], a total of 165 cases of migrating IUCDs were collected and only 23 were found in the bladder (14%). The incidence of uterine perforation was reported to be 1.6 per 1,000 insertions [4]. Most per-

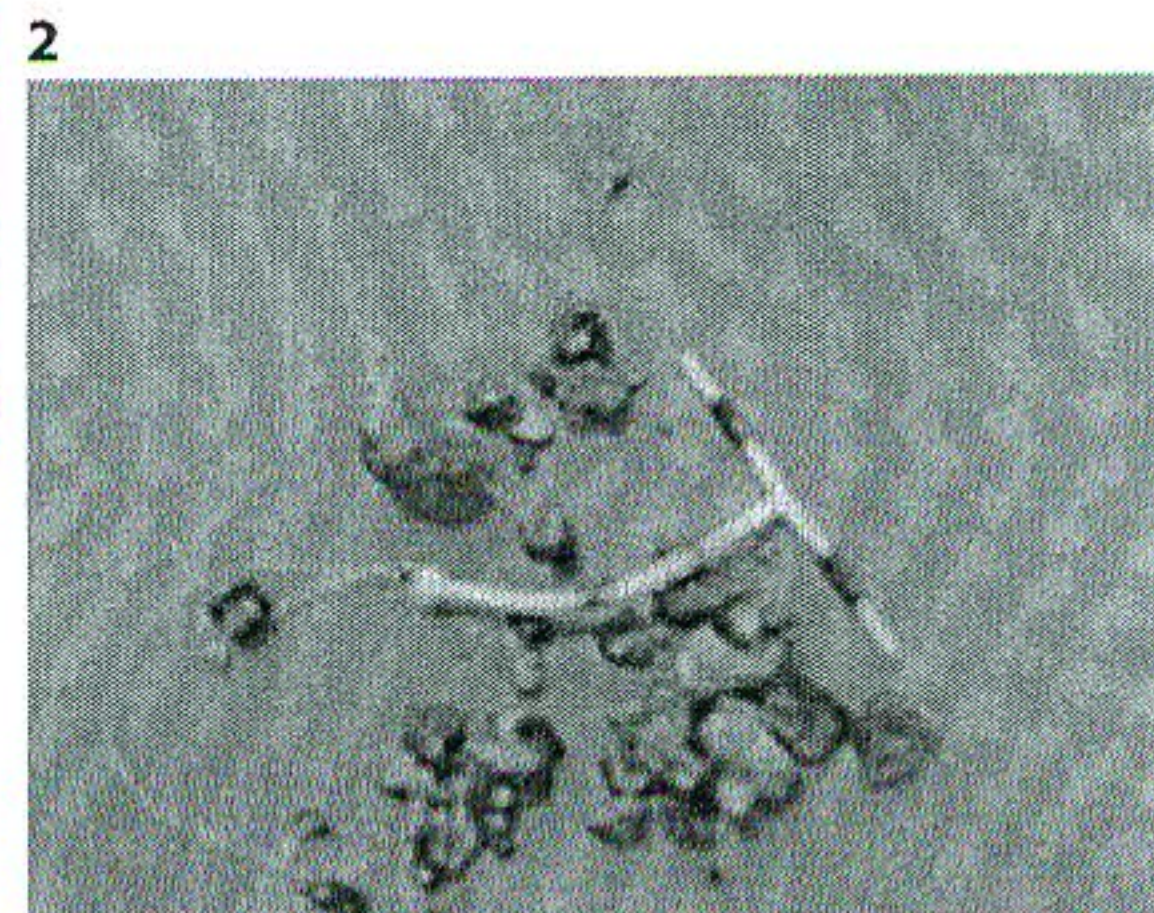
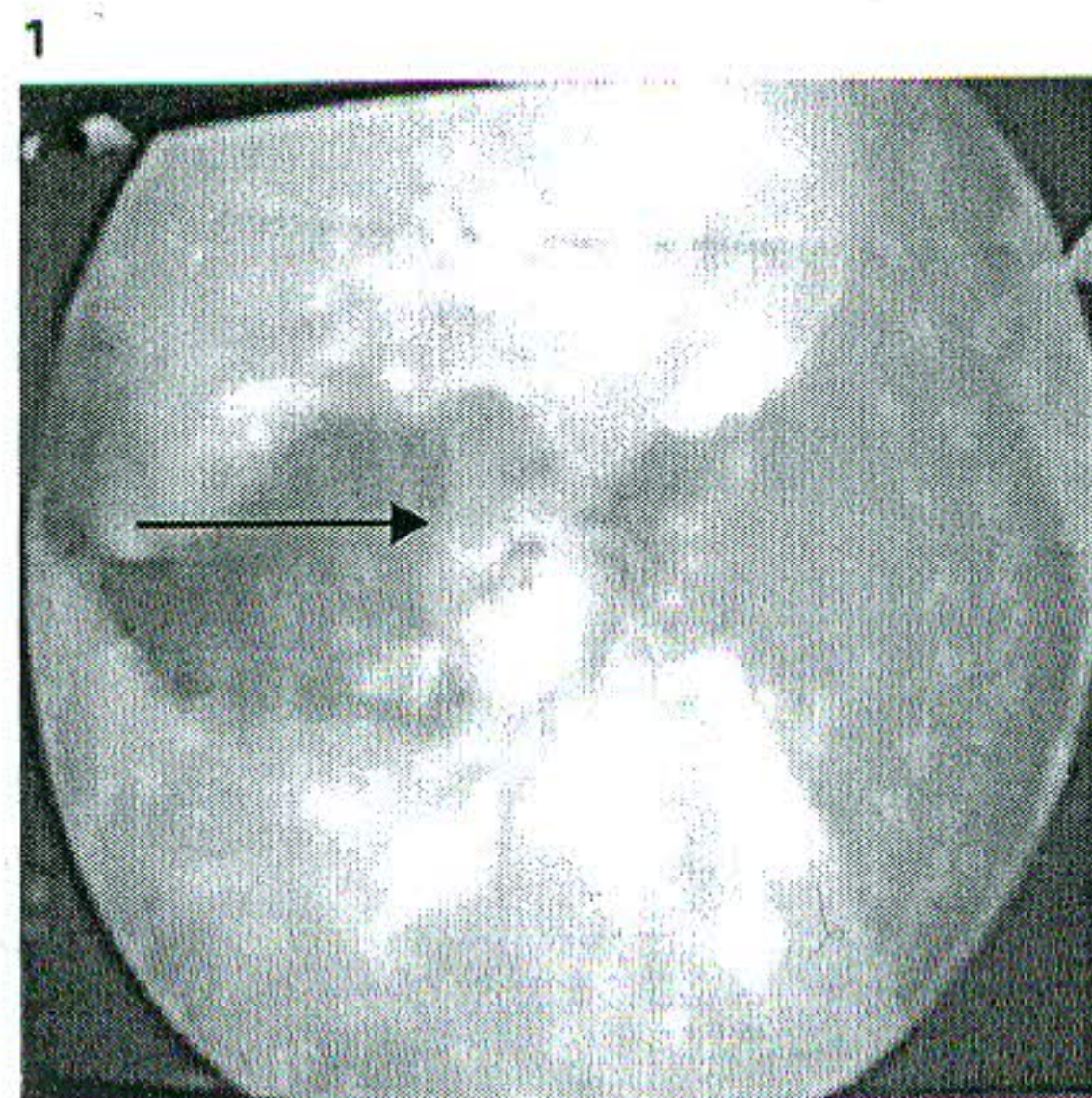


Fig. 1. A T copper IUCD (arrow) appearing after stone fragmentation was started.

Fig. 2. IUCD and stone fragments extracted from the bladder.

forations are diagnosed at the time of insertion (86%) and indicated by pain, bleeding or a lost thread, however some perforations remain undiagnosed for several years [4]. The learning curve is one of the most crucial factors which may determine the risk of misplacement of IUCDs. In a large-scale study [4] it was shown that doctors who reported insertion of <10 devices reported significantly more perforations than those who reported inserting between 10 and 100 devices. These findings emphasize the fact that the placement of IUCDs is an invasive procedure and should be performed by experienced doctors.

In the present case we believe that the erroneous placement of the IUCD deep inside the endometrium wall thus caused an inflammatory process and thereby released enzyme induced by the copper T-shaped IUCD, causing subsequent migration outside the uterus. It was clear that the IUCD's migration resulted in the loss of its contraceptive ability. Thus we recommend the extraction of the IUCD if pregnancy occurs as it may change its position. A wide range of intravesical foreign bodies have been described in the literature – causes include iatrogenic migration of intrauterine device [5], erroneous IUCD inser-

tion in the bladder through the urethra [6], enterovesical fistula due to an intestinal foreign body [7] and fictitious bladder stones in Munchhausen's syndrome [8]. In our case however, we did not expect a similar cause because the IUCD had partially migrated and the stone was fixed to a bladder stone (fig. 1).

Calculus formation is due to calcium precipitation on the device that plays the role of a matrix [9]. Therefore, the encrustation nature of the stone could be a logical justification for the easy fragmentation of such stones (fig. 1, 2). In partially migrated devices we believe that cystoscopy is mandatory for a diagnosis, although ultrasonography has also been reported to be an excellent tool for diagnosis of lost IUCDs [10]. Gentle traction of the IUCD allows complete extraction, which may cause punctuate bladder perforation but heals after prolonged urinary drainage.

To conclude, IUCD placement should be performed by experienced doctors or under supervision, and periodic control is mandatory. Endoscopic management of IUCDs migrated to the urinary bladder could be considered a substitute for open surgery.

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