



Erosion of an intrauterine contraceptive device into the urinary bladder: A case report

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ARTICLE INFO

Article history:

Received 4 October 2020

Received in revised form 18 November 2020

Accepted 18 November 2020

Available online xxxx

Keywords:

Intrauterine device

Bladder perforation

Cystolitholipaxy

ABSTRACT

Intrauterine contraceptive devices may rarely erode into the urinary bladder, usually shortly after insertion. This case report describes the presentation and management of a copper-bearing intrauterine device which had eroded into the bladder. The patient presented with dysuria, dyspareunia and groin pain. The device had been inserted 10 years previously following a termination of pregnancy. A bladder stone had formed on the arm of the T-shaped device. The calculus was successfully lasered transurethrally and the intrauterine device was removed transvaginally. A urinary catheter was left on free drainage for four weeks and a follow-up cystogram showed no leak. Most complications related to intrauterine devices occur within days or weeks of insertion but in this case the complications presented 10 years later.

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1. Introduction

Intrauterine contraceptive devices (IUCDs) are an effective, reversible, long-term method of contraception, estimated to be used by 14.3% of women worldwide [1]. Insertion carries a 2/2000 risk of uterine perforation [2]. If perforation does occur, it is usually identified incidentally either with 'missing threads' or with an unplanned pregnancy. Uncommonly, an IUCD can erode into the bowel. With IUCD perforation of the bowel, patients are normally immediately symptomatic though they can develop symptoms many years later [2].

We report the case of a 47-year-old woman with erosion of her IUCD into the urinary bladder that was successfully managed with a combined transurethral cystolitholipaxy of the bladder stone with transvaginal removal of the IUCD under cystoscopic guidance.

2. Case Presentation

A fit and well 47-year-old woman was referred by her general practitioner to the urology department with left abdominal and groin pain, bloating, visible haematuria, dysuria and dyspareunia. She did not report any lower urinary tract symptoms (LUTS). A T-shaped intrauterine contraceptive copper-bearing device had been inserted 10 years previously at the time of a termination of pregnancy. She had had two children delivered via caesarean section. She was not taking any regular medication. An initial ultrasound (U/S) of the kidney, ureter and bladder

(KUB) showed a bladder stone. Midstream specimen of urine showed sterile pyuria. On examination, her abdomen was soft with mild tenderness in the suprapubic area. Blood tests were unremarkable. The IUCD was visible on the abdominal X-ray (Fig. 1). A CT scan showed the IUCD was located relatively low in relation to the body of the uterus (Fig. 2). The right lateral arm of the IUCD was found to have perforated the posterior wall of the bladder and an 11 mm stone had formed on the IUCD arm. Flexible cystoscopy confirmed these findings.

The case was discussed at the hospital's complex urogynaecology multidisciplinary team meeting. As the patient wished to avoid an open procedure, she was consented for cystoscopy, bladder biopsy, cystolitholipaxy and hysteroscopy with endometrial biopsies as an initial procedure. She was informed that a more invasive, reconstructive procedure involving a vesico-uterine fistula repair with an omental graft and hysterectomy might be required if the initial less invasive procedure was not successful.

Examination under anaesthesia revealed no masses. The coil threads were clearly visible at the external cervical os. Cystoscopy revealed a 11 mm calculus on the posterior bladder wall (Fig. 3). The surrounding bladder mucosa was healthy. The calculus was lasered to small fragments using a holmium laser with a 550 nm laser fibre at 0.8 J at 8 Hz. Under cystoscopic guidance, the coil was subsequently removed transvaginally (Fig. 4). A 14 French 2-way urethral catheter was inserted and left on free drainage for 4 weeks.

A follow-up cystogram showed no urinary leak or evidence of fistula (Fig. 5) and the catheter was successfully removed. At follow-up the patient remained asymptomatic. Her dysuria symptoms had resolved and she did not report any urinary leakage or cyclical haematuria. She is currently using an alternative method of contraception.

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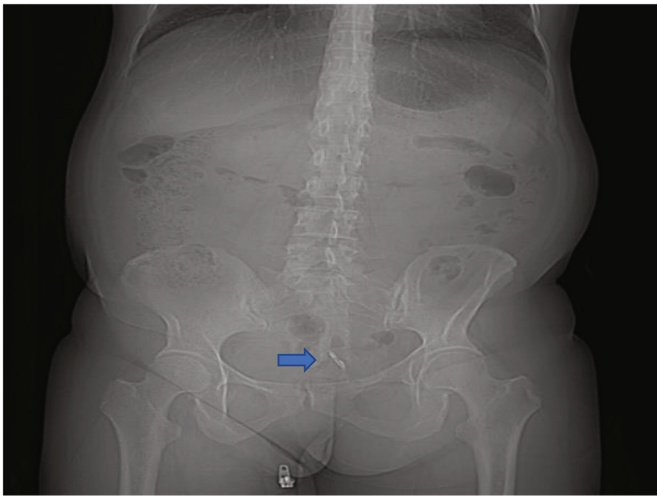


Fig. 1. Plain abdominal X-ray with arrow pointing towards IUCD.

3. Discussion

Perforation of an IUCD through the uterus can result in the device migrating to surrounding structures such as the bowel, omentum and urinary bladder. Factors such as uterine size, congenital uterine abnormality, hypo-estrogenic state and previous pelvic surgery can increase

the risk of perforation and migration of the device [4]. Two mechanisms have been proposed by Esposito et al.: immediate perforation during insertion and a secondary process from gradual erosion [5]. In this case, it is likely that the IUCD perforated the uterus through her caesarean scar. Bowel and omental perforation have been previously reported in literature. The World Health Organization (WHO) recommends that IUCDs be removed immediately if they have migrated following uterine perforation. However, other authorities advise against removal of device in asymptomatic patients [6]. In this case, transurethral cystolitholapaxy and removal of the IUCD were performed successfully, which enabled the patient to avoid complex lower urinary tract reconstruction and hysterectomy.

The most common presentation of IUCD perforation of the bladder is urinary tract infection [3]. This case shows that bladder perforation may also present with haematuria or LUTS. Rowlands et al. have reported measures which may reduce the risk of IUCD perforation [7]. These include avoiding insertion in the immediate postpartum period, use of a plastic rather than metal uterine sound, a pull-back release mechanism for the device (rather than a push-out mechanism) and insertion by an experienced clinician.

4. Conclusion

IUCDs are an effective and reliable method of contraception. However, asymptomatic or symptomatic uterine perforation and erosion into adjacent organs have been reported. Management of this case required a structured, multidisciplinary approach, which successfully

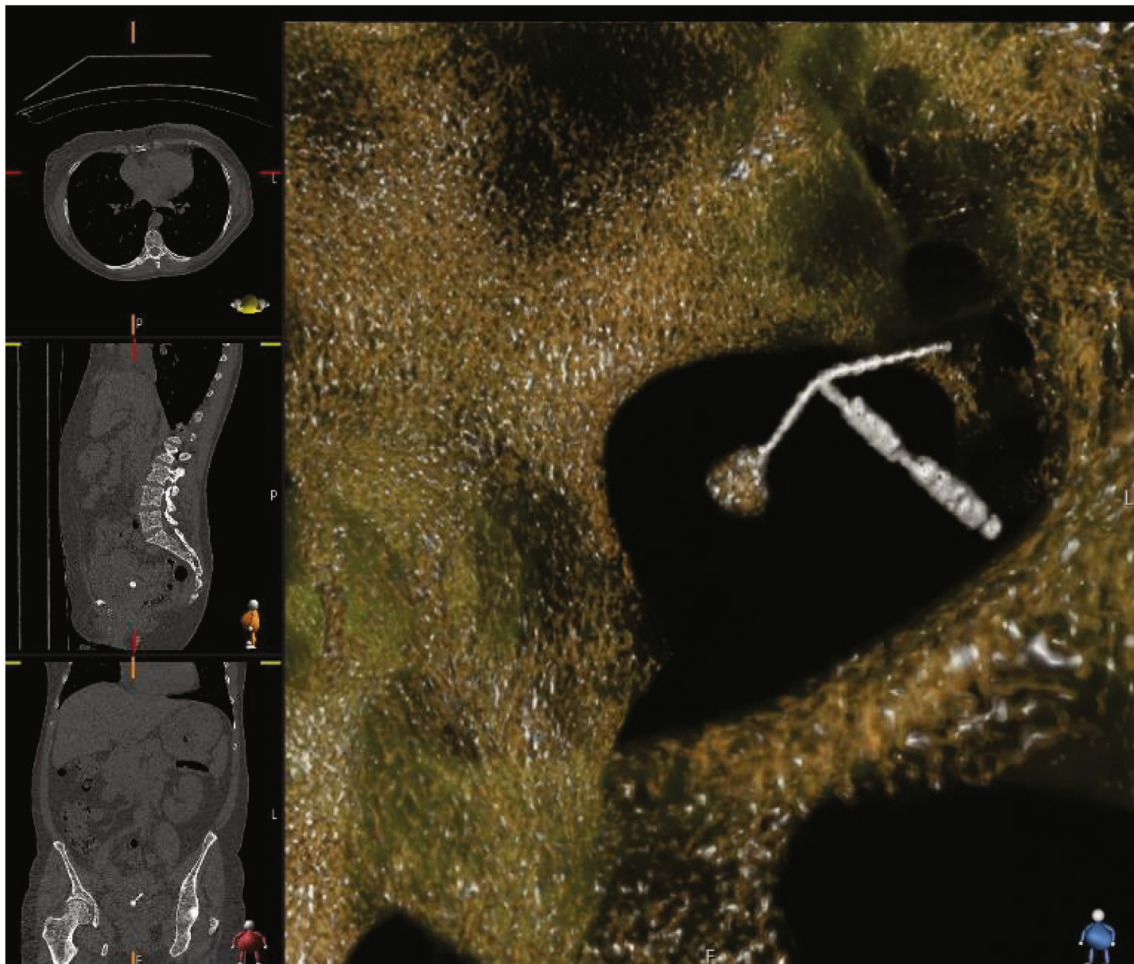


Fig. 2. CT showing right lateral arm of IUCD perforating the posterior bladder wall with stone attached to the IUCD arm within the bladder.

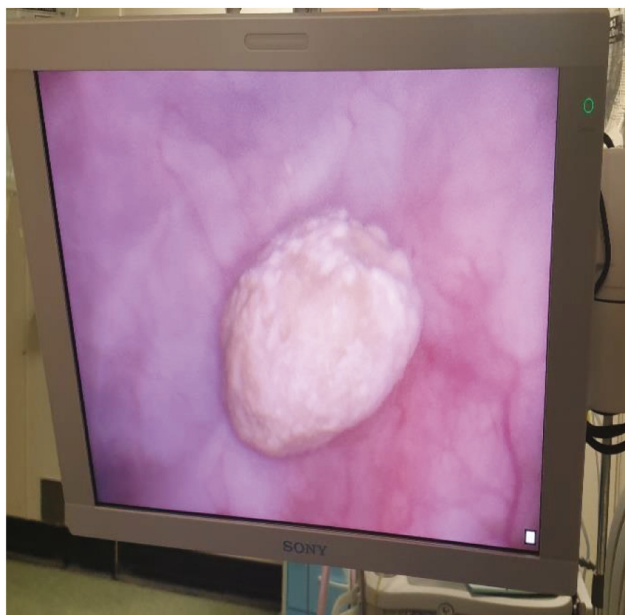


Fig. 3. Bladder stone inside urinary bladder.



Fig. 4. Intrauterine device after removal.

avoided the need for a more complicated open, reconstructive procedure, in keeping with the patient's wishes.

Contributors

Muhammad Waqar contributed to conception/design and drafting of the article.

Amr Moubasher conception/design and drafting of the article.

Torath Ameen conception/design and drafting of the article.

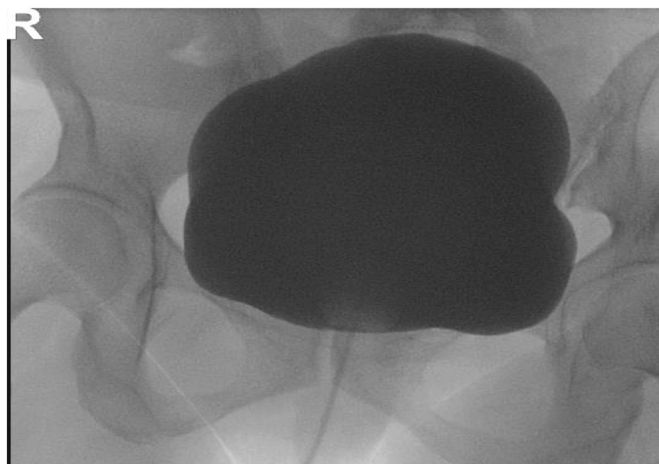


Fig. 5. Follow-up cystogram showing no urinary leak or fistula.

Dudley Robinson performed the procedure, and contributed to review and revision of the manuscript.

Nicholas Faure Walker was the consultant in charge of procedure, and contributed to review and revision of the manuscript.

Conflict of interest

The authors declare that they have no conflict of interest regarding the publication of this case report.

Funding

No funding from an external source supported the publication of this case report.

Patient consent

Obtained.

Provenance and peer review

Peer review was directed by Professor Margaret Rees independently of Dudley Robinson, one of the authors and Editor of *Case Reports in Women's Health*, who was blinded to the process.

References

- [1] P.S. Muganyizi, G. Kimario, P. Ponsian, K. Howard, M. Sethi, A. Makins, Clinical outcomes of postpartum intrauterine devices inserted by midwives in Tanzania, *Int. J. Gynaecol. Obstetrics*. 143 (Suppl. 1) (2018) 38–42.
- [2] J.J. Reynolds-Wright, R.L. Heller, Delayed presentation of uterine and bowel perforation following insertion of an intrauterine device, *BMJ Sex Reprod. Health* 45 (2019) 224–225.
- [3] D.D. Dietrick, M.M. Issa, J.N. Kabalin, J.B. Bassett, Intravesical migration of intrauterine device, *J. Urol*. 147 (1) (1992) 132–134.
- [4] M. Farmer, A. Webb, Intrauterine device insertion-related complications: Can they be predicted? *J. Fam. Plan. Reprod. Heal. Care* 29 (4) (2003) 227–231.
- [5] J.M. Esposito, D.M. Zarou, G.S.A. Zarou, Dalkon shield imbedded in a myoma: Case report of an unusual displacement of an intrauterine contraceptive device, *Am. J. Obstet. Gynecol.* 117 (4) (1973) 578–581.
- [6] A. Adoni, A. Ben Chetrit, The management of intrauterine devices following uterine perforation, *Contraception*. 43 (1) (1991) 77–81.
- [7] S. Rowlands, E. Oloto, D. Horwell, Intrauterine devices and risk of uterine perforation: Current perspectives, *J. Contracept.* 7 (2016) 19.