Migration of intrauterine copper 7 leading to vesical calculus

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Abstract Intrauterine contraceptive devices have been associated with multitude of complications including uterine perforation and migration into adjacent organs. Here we present a rare case report on 45-year-old lady in whom intrauterine copper 7 (Cu-7) migrated into the urinary bladder leading to calculus formation. The migrated Cu-7 along with the calculus were successfully retrieved.

Keywords Intrauterine contraceptive device · Vesical · Calculus

Introduction

Intrauterine contraceptive device (IUCD) may cause multitude of complications including infection, uterine perforation, abortion and migration into adjacent organs. Migrated intrauterine copper 7 (Cu-7) into the urinary bladder leading to calculus formation is very much uncommon. Here we report a case of migrated intrauterine Cu-7 leading to vesical calculus.

Case report

A 45-year-old women presented with history of occasional suprapubic pain, increased urinary frequency and urgency for 3 months. She also noticed haematuria twice during that period. There was no history of graveluria or pyrexia. She had three issues, last one being 10 years before. Further queries revealed that she underwent D&E by local gynaecologist 1 year after the last child birth and an IUCD was inserted at the same time to prevent further conception. Her menstrual cycle was regular and only recently it was scanty with occasional irregularity.

She was of average built and nutrition. Her kidneys were non-palpable and renal angles non-tender. Bladder was not palpable but mild suprapubic tenderness could be elicited on deep palpation. Per vaginal examination revealed mild tenderness in the anterior vaginal wall and the thread of IUCD could not be felt.

Urinalysis showed 12–15 pus cells and 10–12 erythrocytes per high power field. On urine culture growth of *Escherichia coli* (10^5 CFU/ml) was found. Her blood biochemistry reports were within normal limits. Ultrasonography of abdomen revealed a mobile hyper echoic structure in the bladder with acoustic shadow.

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Uterus and adenaxae were normal and the uterine cavity was empty. Scout film of Intravenous Urography showed a round calculus embedding a Cu-7 in the bladder region (Fig. 1A). Cystogram confirmed that the Cu-7 with calculus were in the bladder and there was no radiologically identifiable fistulous tract from the bladder (Fig. 1B).

After control of urinary tract infection with appropriate antibiotic, cystoscopy was performed. A disc shaped calculus with limbs of the Cu-7 protruding from the calculus were seen. There was no breach in the bladder mucosa. The calculus was fragmented with the help of cystonephroscope and pneumatic lithotripter. All the fragments and the Cu-7 were removed (Fig. 2). The patient had uneventful recovery. She was discharged on second postoperative day.

Discussion

Varieties of intravesical foreign bodies have been discussed in the literature. Those may be self introduced, iatrogenic or migrated from different organs like uterus, rectum, vagina, etc [1]. But migration of IUCD into the urinary bladder and calculus formation around that has rarely been published [2].

Out of different types of IUCDs for contraception in females, copper carrying devices in which copper wire is wrapped around the vertical stem of the polypropylene frame, like copper T-200, Cu-7 are very popular in our country. Bow and steel ring type IUCDs have been associated with uterine perforation 5–10 times more frequently than perforations reported with loop and spiral devices. The relatively high perforation rate associated with the Dalkon shield, approximately 2–3 per 1,000 insertions, is thought to be related to it's design, requiring extreme care at the time of insertion, especially in the postabortal and post-partum periods [3]. In the present case also the Cu-7 was inserted just after D&E.

Fig. 1 (A) Scout film of IVU showed round calculus embedding a Cu-7(IUCD) in the bladder region (B) Cystogram confirmed Cu-7 with calculus in the bladder and no radiologically identifiable fistulous tract

Fig. 2 Fragments of removed calculus with Cu-7 (IUCD)

Again routine postinsertion checkup at 2 weeks, and proper patient instruction regarding frequent self examination are important methods for the detection of uterine perforation [4].

Vesical calculi are unusual in women and the presence of intravesical stones should raise the suspicion of the presence of a foreign body. Erosion of an intrauterine device into the bladder should be considered whenever a woman with an unretrieved intrauterine device presents with irritative voiding symptoms, pelvic pain and/or haematuria [5].

Persistent vesicouterine fistula with menouria may also occur as a complication of perforating IUCD [6].

In the present case fortunately there was no persistent vesicouterine fistula but untoward effects of calculus and foreign body in urinary bladder including neoplastic change could have happened, if remained unnoticed for very long time.

Conflict of interest The authors do not have any disclosable interest

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