

# BLADDER CALCULUS RESULTING FROM AN INTRAVESICAL TRANSLOCATION OF INTRAUTERINE CONTRACEPTIVE DEVICE IN A POSTMENOPAUSAL WOMAN

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## ABSTRACT

Although perforation of the uterus by an intrauterine contraceptive device (IUCD) is commonly encountered, intravesical translocation and secondary calculus formation is a very rare complication. We report a case of a 60-year-old multiparous woman in whom an intrauterine contraceptive Copper-T device inserted 12 years earlier translocated from the uterus to the bladder and resulted in formation of a calculus. Diagnosis was established with pelvic ultrasonography and plain abdominal radiograph. The cystoscopic removal was not successful due to the large size of the calculus. The patient later underwent cystolithotomy. Sonographic follow-up immediately after the insertion and at six month intervals will go a long way in early detection of any possible complications.

### KEYWORDS

Intravesical, calculus, translocation, contraceptive

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## INTRODUCTION

**I**ntrauterine contraceptive device (IUCD) is effective, reversible and long term contraceptive method that is widely used in our environment with high acceptability and continuation rate<sup>1,4</sup>. In Nigeria IUCD acceptance ranges from 47% to 66% in different family planning centres<sup>3,5</sup>.

The use of IUCD has been associated with many complications such as menorrhagia, dysmenorrhea, ectopic pregnancy, pelvic inflammatory disease, pregnancy, spontaneous abortion, uterine perforation and migration into adjacent organs<sup>1,2,4</sup>.

Intravesical calculus is not common in women, hence the presence of a bladder stone should raise suspicion of the presence of a foreign body like IUCD<sup>1,6,7</sup>.

Imaging has an important role in the evaluation of IUCDs, it is not only to check that an IUCD is in the

correct position to be effective but also to assess for associated complications<sup>8</sup>.

## CASE REPORT

A 60 year-old Para 12<sup>0</sup>, 8 alive, multiparous, postmenopausal women whose last child birth was 12 years ago presented to out-patient Department Federal Medical Centre Birnin Kebbi, Kebbi State, Nigeria, with lower abdominal pain of two months duration, associated with dysuria and urinary incontinence. She had a 12 years history of an IUCD insertion. She never went for follow up after placement of copper-T IUCD until she developed the present complaints.

Vaginal speculum examination revealed a vulva soiled with urine. No vaginal discharge but there is some evidence of vaginal atrophy. The device string was not visualized.

The full blood count, urea and electrolyte were normal. Urinalysis revealed microscopic haematuria<sup>3+</sup>, proteinuria<sup>2+</sup> and nitrite<sup>+</sup>. Urine microscopic culture and sensitivity showed no casts but yielded growth of *E. coli* sensitive to nitrofurantoin.

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The ultrasonographic examination of the pelvis showed a vesical calculus measuring 3.0 x 2.6cm, with suspicion of foreign body with it (Figure 1). Plain X ray of the pelvis showed a round opacity of a calcific density around the horizontal arm of the IUCD in the pelvis, suggesting the presence of a calculus attached to IUCD (Figure 2). The patient was diagnosed of urolithiasis secondary to IUCD translocation and underwent cystoscopy. Cystoscopy showed calculus formed over one of the horizontal arms of the IUCD while the remnant of the device string was seen hanging over the vertical limb. We failed to extract the stone together with IUCD by cystoscopy.

The stone and the device were removed surgically by suprapubic approach. There was no fistulous connection or fibrous adhesion between the uterus and the bladder, no other growth in the bladder, and the internal bladder opening was normal. The stone was attached to the IUCD without the device string (Figure 3). Continuous drainage of the bladder was maintained for 7days, and the patient had an uneventful recovery.

Fig. 1: Sonogram of the urinary bladder, showing the calculus with suspicion of foreign body with it.

Fig. 2: Plain radiograph of the abdomen demonstrating a round opacity of calcific density around the horizontal arm of an inverted intrauterine contraceptive device (IUCD)

Fig. 3: Calcified intrauterine contraceptive device removed intact from the urinary bladder

Fig. 4: IUCD separated from the calculus

## DISCUSSION

IUCD is the most popular method of reversible contraception due to its high efficacy for fertility regulation, low risk, low-cost and the fact that regular visits to health care provider is not required<sup>3</sup>. It is a widely accepted worldwide contraceptive instrument especially in the developing countries<sup>1,3</sup> and is the commonest method utilized in many hospitals in Nigeria<sup>3,5,9</sup>.

The device is associated with a number of complications such as dysmenorrhea, hypermenorrhea, lower abdominal pain, pelvic infections, ectopic pregnancy, uterine perforation and migration into adjacent organs<sup>1,6,8</sup>. When the IUD migrates outside the uterus, it can lead to additional complications, such as bowel or bladder perforation<sup>8,10</sup>.

When uterine perforation by IUCD happens, the device may escape into the Pouch of Douglas, peritoneal

cavity, sigmoid colon, and rectum and urinary bladder<sup>7,8,10,11</sup>.

Inept insertion and position, fragile uterine wall, multiparity, recent abortion or pregnancy, following cesarean section, sepsis and undetected extreme posterior uterine position are some of the factors associated with uterine perforation and subsequent intravesical migration<sup>1,7,12,13</sup>. In our case the IUCD was inserted in a multiparous woman during puerperium. These may be partly responsible for the translocation.

Intravesical IUCD is commonly accompanied by lower abdomen pain, recurrent urinary tract infection, haematuria, calculus formation, suprapubic pain, dysuria, urinary tract obstruction secondary to calculus, and urinary incontinence<sup>1,7,13</sup>. We report a woman who presented with lower abdominal pain and irritative lower urinary symptoms 12 years after insertion of an IUCD following her last child birth. Ever since then, she has attained menopause and she never went back to the family planning clinic for discontinuity of the contraception. This may be due to inadequate health education about the possible complications and the need to discontinue it after attaining menopause.

Translocation of the IUCD into the bladder and formation of a secondary calculus is an uncommon complication<sup>6,7</sup>. Majority of these patients generally present with the main complaint of not being able to find the device string<sup>7</sup>. This patient had not seen the device string for a very long time and yet she did not complain at the clinic. Perhaps, she was not properly informed about what to do when the device string is missing.

In the cases of IUD migration into the bladder, calculus formation usually occurs at the dependent portion of the IUCD due to sediments formation at the base of the bladder<sup>1,2,6,7,13</sup>. Independent of the duration of the device in the bladder, the device can either be partially or completely encrusted with calculus<sup>1</sup>. In the index case, it occurs partially around the transverse arm of the device because it is inverted within the urinary bladder.

The role of imaging is to ensure that the device had been properly inserted at the early stage and to localize it when it has been dislodged. IUCD is echogenic on ultrasound and radiopaque on plain radiograph and Computed Tomography<sup>1,11,13</sup>. Ultrasound is widely used for the evaluation of patients with a suspected dislodged IUCD. Abdominopelvic or transvaginal ultrasound may be helpful in the localization of the migrated device,<sup>1,7,11</sup>. In this case, abdominopelvic scan

with distended urinary bladder was carried out. This provided good contrast for better visualization of the device. A migrated device in the bladder may be missed if transvaginal US was used since it is done with an empty bladder.

Plain radiography is to show whether the translocated IUCD is present within the body of the patient<sup>1,13</sup>. In this patient, the device is seen inverted within the pelvis. Unenhanced CT may be necessary to accurately localize an IUCD if the finding on ultrasound is equivocal<sup>1,6,13</sup>.

Evaluations at our centre with pelvic sonography and plain radiograph of the pelvis revealed an IUCD with a bladder calculus formed around it.

Cystoscopy is another method to detect the intravesical IUCD and can be of help in effectively planning of the optimal approach for removing the IUCD<sup>6</sup>. It is not always possible to remove the vesical calculus and the translocated device cystoscopically due to the size of the stone, operation by suprapubic approach may be necessary, as in our case, and some other reported cases<sup>2,6,11</sup>.

#### CONCLUSION

Translocation of IUCD into the bladder with calculus formation is a rare event<sup>14</sup>. Persistent lower urinary tract symptoms in women with IUCD should raise the suspicion of intravesical translocation. Adequate health education should be given to clients about likely complications, time for re-insertion (renewal) or discontinuity especially after they have attained menopause. Also, we recommend sonographic follow-up at the time of insertion and, thereafter, periodically at 6 months interval. This will go a long way in early detection of any possible complication.

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