



Vesicovaginal Fistula: The Case Report of a Rare Sequelae from Vesical Transmigrated Intrauterine Contraceptive Device

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Abstract

Vesicovaginal fistula is a debilitating condition with significant medical, social, psychological, and economic consequences for women. It is mainly caused by prolonged obstructed labor in developing countries. On the contrary, iatrogenic injury during surgery is the most common cause in developed countries. The intrauterine contraceptive device is a safe and acceptable method of contraception used by millions of women all over the world. Bladder calculus may be caused by the presence of a foreign body in the bladder. We report a rare case of an intrauterine contraceptive device migrating to the bladder leading to the formation of a vesicovaginal fistula and a large bladder calculus.

Keywords: Vesicovaginal fistula; Obstructed labor; Intrauterine contraceptive devices; Bladder calculus

Introduction

Vesicovaginal fistula is an abnormal communication between the epithelial surfaces of the bladder and vagina leading to urinary incontinence [1,2]. Estimates suggest that at least 3 million women in low- and middle-income countries have unrepaired vesicovaginal fistulas and that 30,000 to 130,000 new cases develop each year in Africa alone mainly due to prolonged obstructed labor [3,4]. Conversely, in high-income countries, vesicovaginal fistulas are mainly due to iatrogenic injury during surgery of which gynecological surgery constitutes the majority [5]. Other obstetric causes of vesicovaginal fistula include instrumental vaginal delivery, destructive operations, cesarean section with or without hysterectomy, female genital mutilation and Gishiri cut. Non-obstetric causes include infections such as tuberculosis, schistosomiasis, pelvic malignancies and pelvic irradiation [6].

Intrauterine contraceptive devices are highly effective and safe modern methods of contraception utilized by millions of women all over the world [7-9]. It is one of the most common methods used by married or in union women worldwide second only to female sterilization [8]. Common side effects associated with intrauterine contraceptive devices include menorrhagia and lower abdominal pain [9]. Uterine perforation is a rare complication that occurs in 0.4/1000 insertions and is associated with post-partum insertion (less than 6 months following delivery) and breastfeeding during insertion [10]. Previous reports of intravesical migration of Intrauterine devices have been mainly associated with Lippe's loop and Saf-T-Coil [11,12]. We report a very rare case of Cupper T380 intrauterine contraceptive device migrating to the bladder leading to vesicovaginal fistula and a large bladder calculus. This is a very rare complication of IUCD, necessitating a report of the index case.

Case Presentation

Our patient is a 48-year-old Para 5 (5A) with one previous Caesarean section scar, during which a postpartum cupper T380 intrauterine contraceptive device was inserted, this was her last childbirth, 6 years before presentation. She presented with a 2-week history of involuntary leakage of urine, which was preceded by recurrent chronic history of dysuria, frequency, urgency, and occasional hematuria. She has had urine microscopy, culture and sensitivity on three different occasions that revealed *Klebsiella* and *E. coli*, symptoms persisted despite treatment. She was referred from a private

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Figure 1: Showing the vaginal, the base of the calculus formed by the copper T 380 intrauterine contraceptive device.



Figure 2: Showing the vaginal, calculus formed by the copper T 380 intrauterine contraceptive device bridging the Vesicovaginal fistula at the anterior vaginal wall.



Figure 3: Showing the removed copper T 380 intrauterine contraceptive device and attached formed calculus.



Figure 4: Copper T 380 intrauterine contraceptive device and the formed calculus.

hospital when she started leakage of urine uncontrollably, where she has been repeatedly managed for urinary tract infection. The leakage was initially intermittent until it eventually became continuous.

Patient had completed her family size but declined permanent sterilization, she, however, preferred copper T380 intrauterine contraceptive device, which was inserted at caesarean section, the thread of which was missing 3 years after insertion. At presentation, she looked generally unkept, worried, psychosocially depressed with ammoniacal smell. Vital signs were within normal limits. Abdomen was full, moves with respiration, with a well Pfannenstiel scar, no area of tenderness, no palpably enlarged organ, no pelvic mass. Vaginal assessment with sterile Auvard speculum, revealed a grossly normal vaginal, a huge calculus of about 4 cm in widest diameter was seen hanging on the anterior wall of the vaginal, bridging the fistula between the bladder and the anterior wall of the vaginal (Figure 1, 2) with some part of the calculus in the vaginal, another in the bladder, the two arms of the copper T380 intrauterine contraceptive device hanging within the bladder and urine was seen dripping down to the vaginal around the calculus. A sponge holding speculum was used to remove the calculus which was already adhered to the copper T380 intrauterine contraceptive device. Following the removal of the

calculus, a 2 by 3 cm vesicovaginal fistula in the widest diameter was seen.

She was counseled on the findings and subsequently, the vesicovaginal fistula repair was done *via* the vaginal route by carefully dissecting to separate the vaginal walls from the bladder wall, edges were refreshed, and repair was done in layer while ensuring is not under tension yet water tight. A negative dye test assessment after the repair was achieved and the procedure was well tolerated. Urinary catheter was retained for 14 days, a repeat dye test was done at the point of discharge which was negative. The patient expressed satisfaction and excitement with her treatment and gave consent for the documentation and publication. Findings are shown in (Figures 1-4).

Case Discussion

Cu T380 intrauterine contraceptive devices are highly effective, safe, Long Acting and Reversible Contraception (LARC) with a failure rate of 0.08% making it more than 99% effective [13]. It is one of the most commonly used contraceptive methods worldwide [11]. Cu T IUCD are T shaped with the top of the 'T' resting across the fundal area of the endometrial cavity [14]. The copper T IUCD is licensed for use for up to 10 years and may be inserted immediately post-partum,

within 10 min of delivery of the placenta, delayed postpartum is when it is inserted within 4 to 6 weeks of delivery and post abortion with the exception of septic abortion [14]. The copper IUCD works by causing a localized cytotoxic inflammatory response against sperm. They can also be utilized for emergency contraception [15].

Copper T380 intrauterine contraceptive devices are generally safe. However, they may be associated with complications such as missing IUCD [16]. As seen in this index patient, an IUCD is said to be missing when the strings are no longer visible outside of the external os [16]. A missing IUCD may be due to severed IUCD strings, retraction of the intrauterine contraceptive device into the uterus, expulsion, migration into the rectum or peritoneal cavity and rarely as seen in this case, with intravesical migration.

We report a 48-year-old Para 5 (5A) woman who had IUCD inserted and later developed a vesicovaginal fistula with a large urinary calculus following intravesical migration. The IUCD was found inside the bladder while the calculus was seen bridging the vesicovaginal fistula with some part within bladder and the other part in the vaginal at the anterior wall, urine was noticed dripping around the calculus. The initiating event, in this case, may have been the intravesical migration into the bladder leading to recurrent urinary tract infection and subsequent encrustation leading to the formation of a giant calculus [11]. IUCD migration into the bladder may present with urinary incontinence, dysuria, hematuria, vaginal discharge and lower abdominal pain. It may also progress to acute kidney failure or metabolic acidosis [11]. The index patient presented with fistulous urinary incontinence but was preceded with features of urinary tract infection such as recurrent chronic history of dysuria, frequency, urgency and occasional hematuria.

The calculus and transmigrated IUCD was removed within the vesicovaginal fistula through the vaginal and the vesicovaginal fistula were repaired *via* same route with a regional anesthesia. The repair *via* the vaginal route was relatively convenient and being the first attempt at repair, the tissue was supple, easy to mobilize and accessibility to repair was good.

In conclusion, Intrauterine contraceptive devices are generally safe and are being used by millions of women all over the world. It could however, though very rarely associate with intravesical migration leading to vesicovaginal fistula and calculus formation, especially when inserted during the postpartum period. Intrauterine contraceptive devices should always be inserted by trained personnel with the necessary skill for counselling and insertion. All possible complications, including rare vesical transmigration, must be clearly highlighted and informed decisions taken.

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Authors' Contribution

Ekundayo Oluwole Ayegbusi is the team lead, contributed to the conception of the study, design, secondary data collection, analysis, and manuscript writing.

Laura Nengi Adetunji is a team member, contributed to secondary data collection, analysis and manuscript writing.

Zainab Foye Abdur-Rahim, Akintunde O. Fehintola, Olatunji Okikiola Lawal, Oluwasomidoyin Bello, Michael Sylvester Archibong, Akinyosoye D. Ajiboye, Akinyemi Jerrie Akindojutimi, Olaniyi Joseph Olayemi are team members, contributed to the analysis, manuscript writing and revision.

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