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Case Report

Uretero-uterine fistula following Manual Vacuum Aspiration for Incomplete abortion: A rare case report☆,☆☆,★,★★

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ABSTRACT

Genitourinary fistulas are a well-recognized complication of various gynecological, obstetrical, and endourological interventions. The incidence of uretero-uterine fistula is very rare compared to other genitourinary fistulas. Few cases are reported in literature regarding the uretero- uterine fistula following manual vacuum aspiration of retained product of placenta. We report a case of 28 year multi-parous women who had presented with complain of involuntary passage of urine following manual vacuum aspiration for retained product of conception. Common tests for suspicion of uretero-uterine fistula include cystoscopy, triple swab

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test, and CT urography. Our patient was diagnosed in CT urography and was managed by exploratory laparotomy with end-to-end anastomosis of the right ureter, DJ stenting, and repair of a uterine perforation. Due to relatively rare incidence of this condition, there has not been a specific guideline for management. A multimodality and multidisciplinary approach have been proposed for the management of uretero-uterine fistulas.

Introduction

Ureteric injuries are usually secondary to iatrogenic origin, occurring as a result of intra-operative manoeuvres during abdominal or pelvic surgery. Uretero-uterine fistulae most commonly follow caesarean sections. A relative rarity, uretero-uterine fistulae constitute less than 6% of all urinary tract fistula [1]. Principle of Management of uretero-uterine fistulae aims to conserve renal function and restore ureteral integrity. The relative rarity of such fistulae however means that there are no clear guidelines on their management [1]. Here, we present a case of a uretero-uterine fistula following manual vacuum aspiration (MVA) for incomplete abortion and was managed with surgical intervention after detailed preoperative evaluations and investigations.

Case report

A 28-year-old woman, who has had 3 pregnancies, 2 live births, and 1 abortion, presented with a complaint of involuntary passage of urine through the vagina for the past 3 days in the gynecology outpatient department. She underwent a medical termination of pregnancy at 17 weeks gestation, which resulted in an incomplete removal of products of conception. She then had a manual vacuum aspiration to remove the retained products at another medical center. A few weeks following the procedure, she started noticing the passage of urine per vaginum but denied experiencing any abdominal pain, fever, or burning micturition. She had no history of pulmonary or genitourinary tuberculosis, or inflammatory bowel disease. All three of her children were born via normal vaginal delivery, and she had no prior history of cesarean section, instrumental delivery, or obstructed labor.

Upon examination, her vitals were stable, and she appeared pale. Her abdomen was soft and nontender, and a vaginal examination revealed a pool of clear fluid consistent with urine in the cervical and vaginal canal, along with a bulky uterus. Initial laboratory analyses showed a decreased hemoglobin level of 7 gm/L (ref: 12.1-15.1 gm/L) and a packed cell volume of 23%. However, renal function tests and urine analysis were normal. Ultrasonography of the pelvis showed mild fluid in the cervical and vaginal canal. Cystoscopy was negative, and a triple swab test showed that the uppermost swab, kept high up in the vaginal canal, was wet but not discolored, supporting a diagnosis of a uretero-genital fistula. Consequently, a CT urography was performed, and on delayed imaging, there was evidence of a contrast-filled fistulous tract extending from the right distal ureter for a length of approximately 7 cm into the posterior uterine wall, with the passage of contrast to the endometrial and cervical cavity and eventually to the vaginal canal. Pooling of contrast was noted in the right adnexa and vaginal canal, with mild right hydroureteronephrosis (Figs. 1 and 2). So, CT urography was proven to be the cornerstone for disease diagnosis in the case.

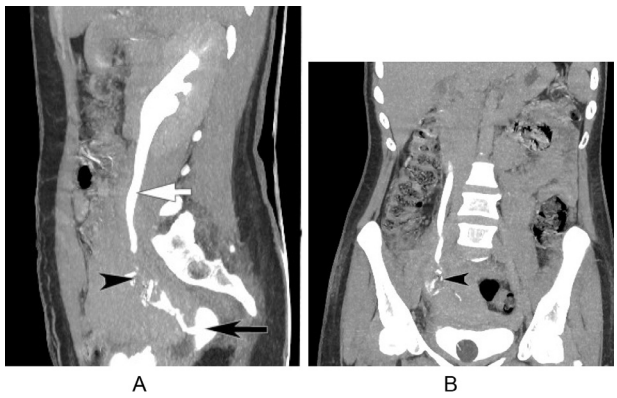

Fig. 1 – MPR sagittal (A) and coronal (B) image of 15 min delayed contrast CT urography showing contrast tracking into the uterine cavity and cervical canal (arrow head) through fistulous communication from posterior wall of uterus. Contrast is seen pooling into the vaginal canal (black arrow). There is mild dilatation of right ureter (white arrow).

Following a preoperative assessment and optimization of her hemoglobin levels, she underwent an exploratory laparotomy with end-to-end anastomosis of the right ureter, DJ

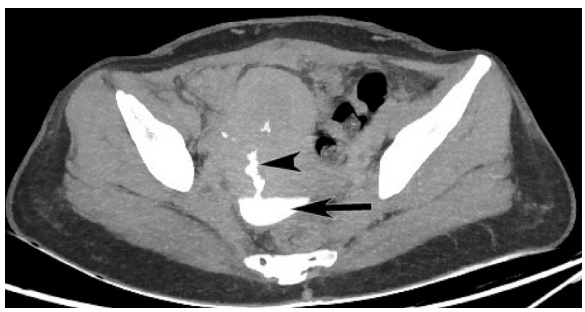

Fig. 2 – Axial image of 15 min delayed contrast CT urography showing site of fistula in posterior wall of uterus (arrow head) and opacification of uterine cavity and cervical canal with contrast pooling into the vagina (arrow).

stenting, and repair of a uterine perforation under general anesthesia. Both the intraoperative and postoperative periods were without any complications. She was discharged on the fourth day after surgery with a drain in place, which was removed during a follow-up appointment.

Discussion

Urine incontinence from the vaginal orifice can occur due to fistulous communication between the urinary and genital structures following complications of various gynecological and obstetrical interventions such as caesarean section, elective abortion, or urological surgery for ureteral calculi [2]. Uretero-uterine fistula accounts for less than 6% of all urogenital tract fistulas [3]. To our knowledge and various literature reviews, very few case reports have been published. Before the advent of computed tomography urography, cases were diagnosed by performing either intra-venous pyelography, as in the case published by Keegan et al in 1982 [4], or retrograde urogram, as in the case published by Adhikary et al in 2006 [5]. The triple swab test is one of the important investigations done for the evaluation of urogenital fistula. In this test, 3 separate sponge swabs are placed in the upper, middle, and lower vagina. The bladder is then filled with diluted methylene blue, and the swabs are removed after 10 to 30 minutes. The diagnosis of a uretero-genital fistula is supported when the uppermost swab is wet but not discolored [6]. In our case, the uppermost swab was wet but not stained blue; therefore, CT urography was done for confirmation of ureteric fistula, which showed abnormal communication of the right distal ureter with the uterine cavity on the delayed phase of the CT scan with mild hydroureteronephrosis.

The primary management approach for utero-uterine fistula, whether caused by a caesarean section or abortion, is to preserve and maintain renal function while restoring the integrity of the damaged ureter [7]. Some authors have suggested using PCN to divert urine in order to prevent sepsis in the short term and delay definitive surgery for 3 months [8]. However, to reduce morbidity, ureteroneocystostomy is recommended in the absence of systemic sepsis [9]. A case published by Lodh et al in 1996 [10] was diagnosed after 2 years of dilatation and curettage and was managed by reimplanting the ureter into the bladder using the Boari-flap technique, while a case published by Selvaraj et al. in 2020 [9] involving utero-uterine fistula following a Caesarian section was managed with ureteric re-implantation with Boari flap and Psoas Hitch of the bladder with DJ stenting. Therefore, there is not much difference in the management of the patients in these 2 scenarios. In our case, the patient was managed with exploratory laparotomy with end-to-end anastomosis of the right ureter with DJ stenting and repair of uterine perforation.

Conclusion

Involuntary leakage of urine per vaginum should raise suspicion of a uretero-uterine fistula following any gynecological, obstetrical, or ureteral intervention. Though the incidence of ureteral uterine fistula is rare, the morbidity and mortality related to it are high, so a multidisciplinary approach is required in management. Preservation of renal function and reestablishment of ureteral continuity are the principal goals of management.

Patient consent

Written informed consent was obtained from patients for publication of this case report and accompanying images. A copy of the written consents is available for review by the Editor in chief of this journal on request.

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