Ureterovaginal fistula resulting from uterine dilatation and curettage for an incomplete abortion: a case report

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Summary
Aims and objectives This is to highlight the case of a multi-gravida who developed ureterovaginal urinary fistula following dilatation and curettage. It is necessary to document the possibility of this injury from the common procedure of D&C.

Case report
This is an unusual occurrence of ureterovaginal fistula resulting from D&C for an incomplete abortion in a patient who had urinary incontinence for 16 years and carried three pregnancies to term while this lasted. Uretero-neocystostomy achieved cure in this patient.

Conclusion
Dilatation and curettage though a common procedure is subject to complications which may make life of the patient miserable especially in this sub region, therefore should be carried out by only trained and skilled hands.

Key words: ureterovaginal fistula, 'dilatation and curettage'

Introduction
Dilatation and curettage (D&C) of the uterus is used for both diagnostic and therapeutic reasons in gynaecology. Several complications have been associated with D&C such as uterine perforation, uterine synaesthesia and pelvic inflammatory disease¹. However, uretero-vaginal fistula (UVF) is not a common complication of D&C. Generally Ureteral injuries are uncommon, seen in approximately 3 per 10,000 trauma admissions and this is largely due to its anatomical retroperitoneal location where it is protected by muscles and the abdominal viscera². However, due to the proximity of its lower third to the pelvic organs, the ureter is often injured during pelvic operations and this may result in either obstruction of the upper urinary tract or urinary fistulae. Unilateral ureteric obstruction, in the face of a normal functioning contralateral kidney, may present with non specific symptoms and signs such as moderate grade fever, flank pain etc., but when both ureters are obstructed, anuria sets in. Urinary fistulae results in continuous urinary incontinence and this is often associated with unending misery to the patients. Unfortunately, genital fistulae are still generally neglected in some developing countries³.

Ureteric injuries are usually iatrogenic and many results from gynaecological procedures such as total abdominal hysterectomy, myomectomy etc. A review of the aetiology of uretero-vascular fistula showed that gynaecological and obstetrics procedures constitute the majority⁴. Urinary fistulae resulting from injury to the ureter includes uretero-uterine fistulae, uretero-vaginal fistula and uretero-cutaneous fistulae⁵. These fistulae usually occur as a result of a breach in the wall of the ureter with resultant formation of a fistulous connection.

Like the causes of ureteric injuries, those of UVF are mainly iatrogenic and it complicates procedures such as
abdominal, vaginal and laparoscopic hysterectomies. Although, there have been local reports on ureterovaginal fistula complicating caesarian sections from Nigeria, ureterovaginal fistula occurring as a result of cervical dilatation and uterine curettage have not been so reported, hence, the need to report this case to highlight the possibility of such injuries.

Case report
A forty year old woman, Para 3, who presented to the unit with a 16 year history of leakage of urine per vaginam following dilatation and curettage for an incomplete spontaneous abortion. The leakage of urine started few hours after the procedure and continued unabated. Despite the discomfort of the urinary fistula, she subsequently had three pregnancies carried to term. One was terminated by an emergency caesarian section for reasons not stated by the patient and the other two pregnancies ended in spontaneous vaginal deliveries of live babies. The patient is neither diabetic nor hypertensive. She was separated from her husband as at the time of presentation.

The patient was a middle aged woman who was worried but otherwise fit. The abdominal examination revealed a fine Pfannenstiel scar with no other abnormal findings. There was evidence of ammoniace dermatitis in the perineum. The external genital revealed a normal vulva and external urethral meatus and urine was seen welling up in the vagina and the os cervix was closed. Speculum vaginal examination under anaesthesia showed visible hyperaemic area with an opening approximately half a centimeter in diameter located 4 centimeters distal to the cervix on the anterior vaginal wall exuding urine. She thereafter had urethrocystoscopy which did not reveal any fistulous opening in the urinary bladder. She had 3 swabs dye test done. Three pieces of gauze were inserted into the vagina while in lithotomy position. A urethral catheter was inserted to fill the urinary bladder with methylene blue and then removed. The outermost gauze was removed. The patient was asked to strain. The pieces of gauze were not stained with dye after they were removed but the innermost one was wet. Intravenous urogram was done and this showed dilated lower portion of the left ureter and spillage of contrast into the vaginal (figure).

The patient had an exploratory laparatomy; the operative findings were a dilated left ureter with adhesions at the lower end of the ureter. The left ureter was transected as low as possible and a left Leadbetter—Politano uretero-neocystostomy was performed and anastomosis was protected by a double J stent. Furthermore psoas hitch procedure was carried out to secure the anastomosis. The vaginal leakage of urine ceased immediately after the operation. The patient was discharged in good condition and the double J stent was removed after six weeks post operatively. She has remained dry and well.

Figure: Intravenous urogram showing a dilated lower third of the ureter and extravasation of contrast into the vagina. Single arrow shows dilated lower third of the ureter and the double arrow extravasation.

Discussion
Uretero-vaginal fistulas (UVF) are often iatrogenic and they complicate various gynaecological procedures. These procedures include but are not limited to both open and laparoscopic hysterectomies. UVF has also been reported to complicate less invasive gynaecological /obstetric procedures such as trans-vaginal oocyte retrieval (TVOR) and procedures on the lower genital organs which usually do not involve a breach of the pelvic diaphragm such as cervical cerclage.

The ureters are retroperitoneal and the lowermost portion of the ureter, which is close to the uterus, is adherent to the peritoneum. The uterine vessels are close to the juxtacervical portion of the ureter making the latter vulnerable during gynecological operations. Injury to the lower end of the ureter often occurs while trying to arrest profuse bleeding from the uterine vessels during procedures such as hysterectomy. It is advisable to apply haemostat only when the operating field is clear. Pressure around the bleeding site usually reduces the bleeding and produces clear view of the operative field.

The incidence of this injury will be reduced when the surgeons have good understanding of this anatomical relationships and bear this in mind at all times. The ureter may also be caught in the closure of the vaginal stump during total hysterectomy. Often time, there is an obstruction of the ureter with the development of a baggy ureter, hydrourereter which may then leak into the vaginal stump. Alternatively, there is a breach in the wall of the ureter and this is incorporated into the vaginal stump; the formation of a UVF then ensues. Following D&C, uterine perforation may occur and if this extends to involve the ureter, uretero-uterine fistula develops. Perforation of the vagina is not as common as uterine perforation but it occurs. When this occurs and it involves the ureter with
a measure of ureteric obstruction distally, UVF ensues as it happened in this patient (Figure 1). Ureteric obstruction may occur from the scarring of the injured ureter or from ligature around the ureter or it may be kinked in the closure of the vaginal stump.

The fact that the patient carried three pregnancies to term after the onset of the urinary fistula and the finding of the site of urine leakage in the wall of the vaginal supported UVF and not Ureterouterine fistula(UUF). Pregnancy in the presence of UUF is difficult. The possibility of UVF following D&C could be explained by the possibility of perforation of the vagina during the D&C into the wall of peritoneum adherent lower portion of the ureter with subsequent formation of UVF. The adherence of the lower third of the ureter to the peritoneum makes the ureter to be fixed and not to slip off making it possible for the perforation from the vaginal to affect the ureter. The injured wall may then heal attached to the perforated vaginal vault.

Ureteroneocystostomy has been an acceptable means of treating UVF though endoscopic insertion of ureteric stents has also been reported to be adequate for cure especially if there was no major breach of the wall of the ureter and before epithelialization of the fistulous tract has taken place.

Ureterovaginal fistula causes misery to patients just like the far commoner vesico-vaginal fistula from the urine leakage. The patients experience reduced self-worth and face social stigma and rejection, even by close relatives such as the husbands. These patients therefore need support as much as possible and the best support that can be given to them is to help correct the fistula. The patient reported in this work had lived with this for 16 years before the correction. It is amazing that despite the urinary fistula the patient still engaged in regular sexual intercourse resulting in three pregnancies and deliveries of two babies.

Conclusion
Ureterovaginal fistula, as a complication of D&C, is a rare occurrence but this distant possibility should be kept in mind as much as possible. Although, complications cannot be completely eradicated, every surgical procedure must be undertaken by qualified personnel and this must be done with all care. This is because complications from procedures could sometimes cause prolonged suffering to the patients.

References