# UTEROVESICAL FISTULAS – A RARE COMPLICATION OF CESAREAN SECTION

**Waqar Azim Niaz, Sarwar Alvi**

Armed Forces Institute of Urology Rawalpindi

## INTRODUCTION

Uterovesical fistula is an abnormal communication between the bladder and the uterus. It is one of the least common acquired urogenital fistulae with a prevalence of 1 – 4% [1] and until recently around 800 cases have been reported in the world literature.

The disease presents with vaginal urinary leakage, cyclic hematuria (menouria), amenorrhea, infertility and first trimester abortions. Cesarean section is the most frequent cause of these fistulas present in almost 88% cases [2]. The diagnosis is confirmed by showing the fistulous tract between bladder and uterus as well as by excluding other more frequent urogenital fistulas. Surgery is the mainstay and definitive treatment of uterovesical fistulas occurring after C-sections. Transvesical – `retroperitoneal or transperitoneal access is considered the most effective with the lowest relapse rate.

We report two cases of uterovesical fistulas caused by C-sections which were repaired successfully after surgery followed by brief review of literature and discussion of treatment options.

### Case No.1

A patient of 39 years age, was admitted on 15th February 2005 in the hospital with 6 months history of continuous dribbling of urine through vagina. She had four C-sections in the past; last one was six months ago. She became incontinent of urine just after her last operation. She also had amenorrhoea for the past six months. Her physical examination was normal and complete blood count, urinalysis and renal function tests were also normal. On cystography, opacification of both bladder and the uterus was seen simultaneously (Figure). Vaginal examination prior to cystoscopy revealed urine in the vagina coming from the cervical os. Cystoscopy revealed a fistulous opening in the posterior wall of the urinary bladder above the level of trigone. Methylene blue injected into the bladder was seen coming out through the cervical os confirming the diagnosis of uterovesical fistula.

She successfully underwent transvesical transperitoneal repair of fistula and was dry at 3 month follow up.

### Case No.2

A patient of 35 years age, was admitted in the hospital on 2nd March 2005 with 5 months history of continuous dribbling of urine through vagina and cyclical haematuria (Menouria). She had a history of three C-sections in the past; last one was 5 months ago. She became incontinent just after last C-section and had continuous dribbling of urine through vagina. During menstruation she also started having menouria (Cyclical Haematuria) while there was no vaginal bleeding during menstruation.

Physical examination and routine laboratory tests revealed nothing abnormal. Cystography revealed opacification of both the bladder and the uterus. Cystoscopy revealed a fistulous opening in the posterolateral wall of bladder above the trigone of the bladder. Injection of methylene blue into the bladder revealed the dye coming out through the cervical os confirming the diagnosis of uterovesical fistula. She had extravesical extraperitoneal repair of fistula with intervening peritoneal flap on March 20, 2005. At 3 months follow up, she was dry with no incontinence of urine.

## DISCUSSION

Uterovesical fistula as the name implies is an abnormal communication between the

**Correspondence:** Col Waqar Azim Niaz, Classified Surgeon, Armed Forces Institute of Urology, Rawalpindi
Email:waniaz@hotmail.com
*Received 15 May 2007; Accepted 26 March 2008*

bladder and the uterus. It is one of the least common acquired urogenital fistulae.

From 1908 to 1947 only 92 cases were reported in the world literature. Since then almost 800 cases have been reported to date [3].

All uterovesical fistulae are iatrogenic and 87% occur after LSCS (Lower Segment Caesarean Section). Incidence rises with each caesarean section. Prolonged neglected obstructed labor is another important cause of such fistulae. Other less common causes include forceps delivery [4], inadvertent catheter penetration of bladder during delivery [5], manual removal of placenta in a patient with past caesarean section [6], perforation of an intra uterine contraceptive device (IUCD) [7], uterine rupture during labor, pelvic irradiation, and placenta percreta with bladder invasion [8] and after uterine artery embolization for leiomyoma uteri [9].

Most uterovesical fistulae result from injury to bladder wall leading to its necrosis and dehiscence of a lower uterine segment incision. Ischemia may also be caused by holding the inadequately mobilized bladder wall with hemostats subsequently leading to fistula formation. This can be prevented by emptying the bladder and by carefully dissecting the lower uterine segment.

This fistula may present immediately after a C-section or it may manifest in the late puerperium. These patients may present with cyclic haematuria i.e. menouria with amenorrhea without any vaginal urinary leakage. This is termed as Youssef's syndrome [10]. However, in most cases variable degrees of intermittent urinary incontinence is seen with cyclical haematuria as was evident in one of our case. Other atypical presentations include recurrent urinary tract infectious (UTIs), secondary infertility, and first trimester abortions, urge incontinence and urethral passage of lochia. On vaginal examination, the only positive finding is urine trickling through cervical os.

The differential diagnosis includes incontinence resulting from urethral or bladder dysfunction, ureteral ectopia and other urogenital fistulae like vesicovaginal, ureterovaginal, ureterouterine and vesicocervical fistulas.

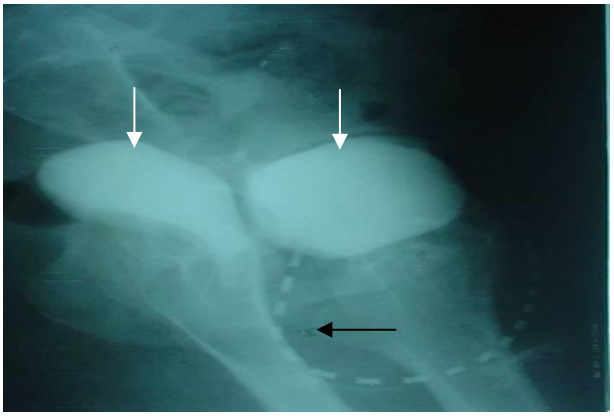

**Figure: Cystography Opacification of bladder and the uterus (white arrows) with fistulous communication. Black arrow indicates catheter in the bladder.**

Investigations including cystoscopy and cystography are diagnostic and help in identifying these fistulae and provide information about their size, number, and location in relation to trigone and ureteric orifices. Intravenous urography is indicated to assess the status of upper urinary tract and to identify other concomitantly occurring fistulas like ureterouterine fistulas. Hysterosalpingography will reveal contrast in the bladder. Color Doppler ultrasound examination and contrast enhanced helical CT scanning after cystography or hysterography have also been suggested as a means to identify and localize uterovesical fistulae [11].

Treatment options include conservative treatment as well as surgical repair, although surgery is the mainstay and definitive treatment of uterovesical fistulas especially after C-section. Conservative management by bladder catheterization for at least 4 to 8 weeks is indicated if the fistula is discovered just after delivery but the chance of spontaneous closure is only 4%. Some studies suggest the role of hormonal treatment in the form of estrogens and progestogens in the management of uterovesical fistulae especially in cases of Youssef's syndrome [12].

Surgery is the definitive treatment in most of the cases of uterovesical fistulas. Surgical repair of these fistulae is performed by different approaches which include:

- Vaginal approach: especially for vesicocervical fistulas
- Transvesical retroperitoneal
- Extravesical extraperitoneal: for small fistulae located at the dome of the bladder with minimal scarring
- Transvesical transperitoneal: this is considered the most effective with lowest relapse rate.

After dissection and identification of the fistulous tract, the fistula with a cuff of a uterus and bladder is excised and uterine and bladder defects are closed separately in layers. A layer of vesical peritoneum or greater omentum should be interposed between the two sides. Transurethral bladder drainage should be carried out for 7 to 10 days postoperatively. A hysterectomy is usually not required for fistula repair unless there is a very large defect in the uterine wall.

Cystoscopic fulgration of fistulous tract is a new and simple technique advocated by some authors for smaller fistulae [13]. Recently laparoscopic repair has been proposed as an alternative to open surgery [14]. This is especially useful for smaller fistulae and vesicocervical fistulas. It is associated with minimal blood loss, low morbidity and less hospital stay.

After uterovesical fistula repair if the patient conceives again, delivery should be performed by repeating a C-section. Pregnancy rate after such repairs is 31% with a rate of term deliveries of 25% [15].

## CONCLUSION

Uterovesical fistulae are the least common type of urogenital fistulae. They are mostly found after repeated caesarean sections. They can be prevented by preoperative emptying of the bladder and adequate mobilization of the bladder during surgery. They can be suggested by their typical symptoms, easily diagnosed by imaging, examination and successfully treated by transperitoneal/extraperitoneal closure. Such cases should be referred to the centres of excellence so that they are managed at the earliest in an appropriate manner.

## REFERENCES


1. Ibachie GC, Njoku O. Vesico-uterine fistula; Br J Urol 1985; 57: 438-9
2. Jozwik M, Lotocki W. Vesicouterine fistula – an analysis of 24 cases from Poland. Int J Gynecol Obstet 1997; 57(2): 169 – 72
3. Yip SK, Leung TY. Vesicouterine fistula – an updated review. Int Urogynecol J Pelvic Floor Dysfunct 1998; 9(5): 252 – 6
4. Nouira Y, Feki W, Rhouma SB, Salah IB, Horchani A. Vesicouterine fistula as a complication of forceps delivery: a case report. Int Urogynecol J Pelvic Floor Dysfunct 2005; p
5. Futter NG, Baker K. A vesicouterine fistula caused by catheterization during delivery. Can J Urol 1995; 2(1): 107-8
6. Setubal A, Clode N, Bruno-Paiva JL, Roncon I, Graca LM. Vesicouterine fistula after manual removal of placenta in a woman with previous cesarean section. Eur J Obstet Gynecol Reprod Biol 1999; 84(1): 75-6
7. Schwartzwald D, Mooppan UM, Tancer ML, Gomez-Leon G, Kim H. Vesicouterine fistula with menouria: a complication from an intrauterine contraceptive device. J Urol 1986; 136(5): 1066-7
8. Majeed SMK, Shaheena A. An unusual case of Youssef's syndrome (vesicouterine fistula) and its relationship with placenta percreta. J Coll Physicians Surg Pak. 2007; 17(3): 168-9
9. Sultana CJ, Goldberg J, Aizenman L, Chon JK. Vesicouterine fistula after uterine artery embolization: a case report. Am J Obstet Gynecol 2002; 187(6): 1726-7
10. Youssef AF. Menouria following lower segment cesarean section. Am J Obstet Gynecol 1957; 73: 759-67
11. Smayra T, Ghossain MA, Buy JN, Moukarzel M, Jacob D, Truc JB. Vesicouterine fistulas: imaging findings in three cases. Am J Roentgenol 2005; 184(1): 139-42
12. Hemal AK, Wadhwa SN, Kriplani A, Hemal U. Youssef's syndrome: an appraisal of hormone treatment. Urol Int 1994; 52(1): 55-7
13. Molina LR, Lynne CM, Politano VA. Treatment of vesicouterine fistula by fulgration. J Urol 1989; 141(6) 1422-3
14. Miklos JR. Laparoscopic treatment of vesicouterine fistula. J Am Assoc Gynecol Laparosc 1999; 6(3): 339-41
15. Lotocki W, Jozwik M. Prognosis of fertility after surgical closure of vesicouterine fistula. Eur J Obstet Gynecol Reprod Biol 1996; 64(1): 87-90