



Complete Isolated Transection of a Distal Female Urethra Following a Bull Horn Injury: A Rare Urological Emergency

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Submitted January 16, 2013 - Accepted for Publication January 30, 2013

ABSTRACT

Complete transection of the female urethra without associated pelvic fracture is a very rare presentation. We report a case of isolated rupture of the distal female urethra causing complete transection due to a bull horn injury for the first time in the literature. A 42-year-old woman presented to the Emergency Department immediately following a bull horn injury with complaints of severe bleeding via her vagina and lower abdominal pain. A detailed examination revealed full laceration of the anterior vaginal wall with complete transection of the urethra 1 cm proximal to the external meatus with no signs of pelvic trauma on imaging. A primary repair was completed in layers with an excellent outcome, and there was no long-term morbidity during her 1-year follow-up. Female urethral injuries may be difficult to identify but early detection and primary repair provide the best chances of a cure. End-to-end repair is the gold standard for management in such cases.

INTRODUCTION

Urethral injury in females is an uncommon presentation and, unlike male urethral injury where pelvic trauma is a common etiological factor, these injuries are usually complications of vaginal and obstetric surgeries or instrumentation. Apart from being overlooked, these injuries have been inadequately reported in literature and their management is poorly outlined.

CASE REPORT

A 42-year-old lady presented to the Emergency Department 2 hours following a bull horn injury with complaints of profuse vaginal bleeding and pain in the perineum and lower abdomen. The patient had a pulse rate of 92/min and a blood pressure of 104/70 mm Hg. Local examination revealed a thick laceration of the anterior vaginal wall along with a complete tear of the distal urethra 1 cm proximal to the external urethral meatus (Figure 1). Patency of the proximal urethra was assessed by a gentle attempt at catheterization. Her abdominal examination was normal, and her digital rectal and vaginal examinations did not reveal any sign of associated rectal injury. Her pelvic

compression test was negative. A computed tomography (CT) scan of the lower abdomen and pelvis was performed, which did not show any associated pelvic fracture or visceral injury. The routine laboratory workup was also within normal limits.

The patient was taken for emergency repair after initial resuscitation with fluids, antibiotics, and tetanus toxoid. The patient was operated on under spinal anesthesia in a lithotomy position. Both ends of the urethra were identified, mobilized, spatulated, and anastomosed in an end-to-end fashion over a 16 Fr Foley catheter in a single layer. Laceration of the anterior vaginal wall was repaired as a second layer using interrupted full-thickness absorbable sutures (Figure 2), and a vaginal pack was applied.

The postoperative period was uneventful and the patient was able to void spontaneously after removal of the catheter 1 week after surgery. The patient had no difficulty in voiding, and there was no incontinence or fistula formation during the 1 year of follow-up.

KEYWORDS: Isolated urethral injury, female urethral injury, bull horn injury, complete urethral transection

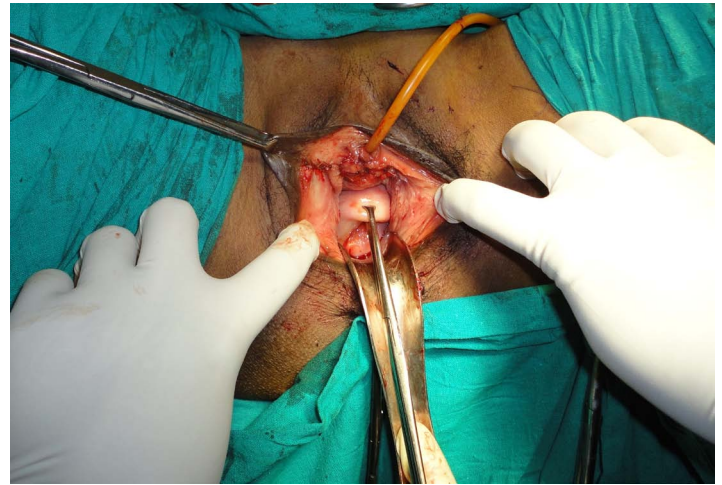
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CITATION: *UroToday Int J.* 2013 April;6(2):art 19. <http://dx.doi.org/10.3834/uij.1944-5784.2013.04.06>

Figure 1. Complete transection of the distal female urethra with anterior vaginal wall injury.



Figure 2. Completed primary repair in 2 layers.



DISCUSSION

Among female patients with pelvic fracture, concomitant urethral injury is rather rare [1], with an incidence of only 4 to 6% [2]. However, many of the female urethral injuries are associated with pelvic fractures. Isolated female urethral injury leading to complete disruption is a very uncommon presentation [3].

The typically encountered female urethral injury consists of a partial tear of the proximal anterior wall, while complete disruption is rare and usually associated with severe vaginal lacerations [4], as in this case. Most of these complete disruptions occur at the level of the bladder neck and proximal urethra, compared to the distal urethral injury in this case. Injuries have been found to be more common in children compared to adults. Injuries due to bull horns are common in rural India [5], but only an isolated case of urethral trauma could be found in the literature following bull horn injury occurring in a male, leading to urethrorectal fistula.

A review of literature reveals few small series on female urethral trauma and some isolated case reports. There is a lack of consensus on the management of female urethral injuries due to their relatively rare occurrence. Urethral injuries in females are more commonly found in association with pelvic trauma, and their management includes urinary diversion by a suprapubic cystostomy and delayed reconstruction for complex injuries [6]. Occasionally, simple urethral disruptions have been repaired. A similar case of isolated urethral transection following blunt trauma has been reported by Takayama et al. [7] but was managed by initial cystostomy and delayed repair.

In our experience, a transvaginal primary repair offers excellent results when the injury is promptly recognized and repaired. Due to the short length and accessibility of the female urethra, simple isolated urethral injuries can be subjected to early and successful repair.

CONCLUSION

Isolated urethral injury in females is a very rare entity, and it is often not subjected to immediate evaluation following trauma. Early diagnosis and prompt transvaginal repair is the best approach to isolated complete transection of the female urethra.

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