

## Iatrogenic hypospadias repair caused by long-term catheterization in a patient with neurogenic bladder: A case report

**Hulya Ozturk.**

*Department of Pediatric Surgery, Bolu Abant Izzet Baysal University, Medical School, Bolu, Turkey*

### ABSTRACT

Long-term urethral catheterization may cause complications such as urinary tract infection, bladder and peritoneal perforation, bladder spasms, catheter-associated penile fracture, urethral stricture, and paraphimosis. In addition to all these complications, long-term urethral catheter-induced iatrogenic hypospadias, as in our case, is a rare condition. Here, we describe a case of a 16-year-old male with neurologic bladder who was found to have iatrogenic hypospadias 2 months after urinary catheterization.

**Key Words:** Long-time urethral catheterization, iatrogenic hypospadias, neurologic bladder.

*Copyright © 2019 [pediatricurologycasereports.com](http://www.pediatricurologycasereports.com)*

*Correspondence: Dr. Hulya Ozturk*

*Department of Pediatric Surgery, Bolu Abant Izzet Baysal University, Medical School, Bolu, Turkey*

*E mail: [hulya\\_ztrk@yahoo.com](mailto:hulya_ztrk@yahoo.com)*

*ORCID ID: <https://orcid.org/0000-0001-7892-1086>*

*Received 2019-08-04,*

*Accepted 2019-08-26,*

*Publication Date 2019-09-01*

catheter-associated penile fracture, urethral stricture, paraphimosis, other than the ventral male urethral injury [3-5]. Here, a 17 - year - old boy with myelomeningocele-induced neurogenic bladder was presented for its rarity and features of the iatrogenic hypospadias due to long-term urethral catheterization.

### Introduction

Long-term indwelling urinary catheterization may be required in patients with neurological and musculoskeletal disorders, spinal cord injury, or with urinary retention unsuitable for surgery [1]. When urethral route is used for long-term urinary catheterization, iatrogenic hypospadias produced by the downward pressure of the catheter appears as an important complication [2]. Long-term urethral catheterization may cause other complications such as urinary tract infection, bladder and peritoneal perforation, bladder spasms,

### Case report

A 16-year-old male patient was admitted to our clinic due to injury to the urethra. The patient's history had a neurogenic bladder associated with myelomeningocele. He also had paralysis of the lower extremities and scoliosis. The patient was found to have undergone bladder augmentation at another center and recommended clean intermittent catheterization. During the last 2 months, he was treated for a wound in his back. During this treatment, it was understood that urethra

damage developed. The patient's glandular and distal urethra were open (Fig. 1).



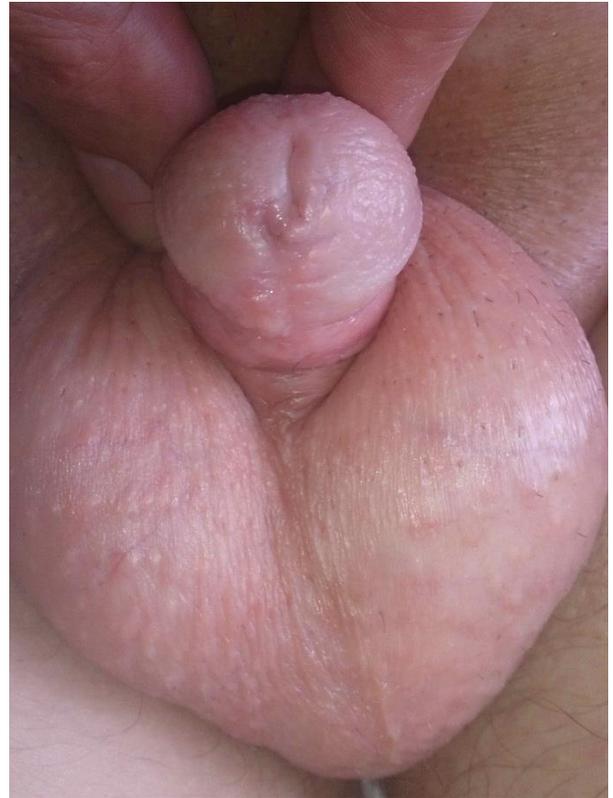
**Fig. 1.** Appearance of iatrogenic hypospadias in the patient's admission.



**Fig. 2.** Intraoperative appearance after the hypospadias repair.

The patient's blood and biochemistry levels were found to be normal. Surgery was planned for iatrogenic hypospadias repair. Hypospadias repair was performed by Mathieu method (Fig. 2).

A 10-fold catheter was inserted into the 2-week urinary tract and a catheter was withdrawn after antibiotic treatment. There was no problem in postoperative wound healing and no fistula developed (Fig. 3).



**Fig 3.** The appearance of the urethral meatus and penis after 6 months of hypospadias repair.

### Discussion

Catheter-induced iatrogenic hypospadias is a rare pathology and its incidence is not fully known. Andrew et al. A similar type of injury was reported in 16 neurological patient groups [2]. Long-term indwelling urethral catheter produces urethral injury due to downward pressure. Therefore, it has been suggested that urethral injury may be due to ischemic effects. According to this theory, larger size of Foley's catheter or improper technique of securing catheter interferes with blood supply of urethra causing ischemic effects. For this reason, small caliber catheters are preferred as they do not put pressure on urethral mucosa or glands

[1,2]. When the case presented here was referred to our clinic, there were 18 F urethral catheters and the catheter was not securely fixed. It was found that the patient had a prone position during wound care in a 2-month-old ridge and it was mostly a pressure on the urethra. Therefore, in our case, there was an ischemic process that triggered the development of iatrogenic hypospadias. According to the iatrogenic hypospadias classification developed by Becker et al. [6], our case can be defined as grade 2. Grade 2 is described as "penile cleavage ranges from the meatus to the subcoronal part of the penis" [6]. In the present case, the iatrogenic hypospadias repair was performed with Mathieu method and 10 French catheters were placed in the urethra. We aimed to create a larger urethral tube with all these. In our patients with normal hypospadias, wound care and catheter retention in a 1-week period. However, in this case we predicted this period as 2 weeks. At the end of this process, the patient's wound was well healed and no complication such as fistula or stenosis developed.

As a results, long-term urethral catheterization may be needed in clinical cases such as neurological and/or musculoskeletal disorders impairing movement, urinary retention, or the need to measure input and output of a patient. Therefore, in patients with long-term urethral catheterization, it is important to take the following precautions: suprapubic catheterization, aseptic precautions, and balloon inflation with proper amount of sterile fluid, choosing appropriate catheter size, and securing the catheter to abdomen or thigh without tension on tubing to prevent complications such as hypospadias. The awareness of this physiological process among

physicians and nurses and taking of the some precautions mentioned above may prevent the development of pressure necrosis caused by long-term catheterization.

### **Compliance with ethical statements**

*Financial disclosure: None.*

*Consent: All photos were taken with parental consent.*

### **References**

- [1]Garg G, Baghele V, Chawla N, Gogia A, Kakar A. Unusual complication of prolonged indwelling urinary catheter - iatrogenic hypospadias. *J Family Med Prim Care.* 2016;5(2):493-94.
- [2]Andrews HO, Nauth-Misir R, Shah PJ. Iatrogenic hypospadias--a preventable injury? *Spinal Cord.* 1998;36(3):177-80.
- [3]Andrews HO, Nauth-Misir R, Shah PJ. Iatrogenic hypospadias--a preventable injury? *Spinal Cord.* 1998;36(3):177-80.
- [4]Baskin LS, Ebbers MB. Hypospadias: anatomy, etiology, and technique. *J Pediatr Surg.* 2006;41(3):463-72.
- [5]Agrawal K, Misra A. Unfavourable results in hypospadias. *Indian J Plast Surg.* 2013;46(2):419-27.
- [6]Becker B, Witte M, Gross AJ, Netsch C. Iatrogenic hypospadias classification: A new way to classify hypospadias caused by long-term catheterization. *Int J Urol.* 2018;25(11):980-81.

Access this article online

<http://pediatricurologycasereports.com>

Quick Response Code

