Unusual complication of prolonged indwelling urinary catheter - iatrogenic hypospadias

Gunjan Garg¹, Vishal Baghele², Naveen Chawla², Atul Gogia¹, Atul Kakar¹

Departments of ¹Internal Medicine and ²Family Medicine, Sir Ganga Ram Hospital, New Delhi, India

ABSTRACT

Long-time urethral catheterization may be responsible for various complications such as urethral stricture, urethral fracture, urinary tract infections, and hypospadias. Hypospadias is the most common congenital anomaly of male external genitalia. However, urethral catheter-induced iatrogenic hypospadias is a rare entity. In this article, we describe a case of an elderly male who was found to have iatrogenic hypospadias 2 months after urinary catheterization.

Keywords: Acquired, hypospadias, iatrogenic

Introduction

Long-term indwelling urinary catheterization is done in patients who have spinal cord injury, neurological or musculoskeletal disorder impairing walking movements or bladder control of person, and in elderly with urinary retention who are unfit for surgery. It is a widespread practice in medical field and its well-recognized complications are (1) Urinary tract infection including urethritis, cystitis, pyelonephritis, epididymitis, periurethral abscess, and transient bacteremia (2) mechanical-bladder and peritoneal perforation, bladder spasms (3) catheter-associated penile fracture (4) urethral stricture (5) paraphimosis (6) cellular toxicity from catheter (7) urinary bladder malignancy associated with catheter (8) catheter blockage due to concretions deposition over catheter lumen.

Case Report

An 80-year-old male, bedridden, known case of bilateral club foot presented to us with the complaints of fever for 3 days. The patient had a high grade, intermittent fever, associated with chills and rigors. He was treated for urinary tract infection 2 months ago and that time had normal urogenital anatomy both clinically and radiologically except for prostatomegaly. He was discharged from the hospital with indwelling Foley’s catheter as he complained of severe weakness on getting up from bed. On physical examination, he was febrile (101°F) and had tachycardia (pulse - 110/min). Urogenital examination showed in situ Foley’s catheter, normal scrotum, eroded penis (glans penis and penile shaft) along with ventrally cleaved penile shaft by indwelling catheter, scanty nonfoul smelling pus discharge, and no lymphadenopathy [Figure 1]. Investigations revealed hemoglobin - 11 g/dl, total leukocyte count - 16,800/cumm, differential leukocyte count showing neutrophilic predominance, platelet count - 1.39 lakh/cumm, and erythrocyte sedimentation rate - 46 mm/h. His renal and liver function tests were unremarkable. Blood culture was sterile. Pus and urine culture grew Klebsiella pneumoniae. He was treated with intravenous colistin; catheter was changed and properly positioned. He was advised to undergo urethral reconstruction.

Discussion

The uncommon complications of prolonged Foley’s catheterization include aberrant Foley’s catheter placement, 2 months ago and that time had normal urogenital anatomy both clinically and radiologically except for prostatomegaly. He was discharged from the hospital with indwelling Foley’s catheter as he complained of severe weakness on getting up from bed. On physical examination, he was febrile (101°F) and had tachycardia (pulse - 110/min). Urogenital examination showed in situ Foley’s catheter, normal scrotum, eroded penis (glans penis and penile shaft) along with ventrally cleaved penile shaft by indwelling catheter, scanty nonfoul smelling pus discharge, and no lymphadenopathy [Figure 1]. Investigations revealed hemoglobin - 11 g/dl, total leukocyte count - 16,800/cumm, differential leukocyte count showing neutrophilic predominance, platelet count - 1.39 lakh/cumm, and erythrocyte sedimentation rate - 46 mm/h. His renal and liver function tests were unremarkable. Blood culture was sterile. Pus and urine culture grew Klebsiella pneumoniae. He was treated with intravenous colistin; catheter was changed and properly positioned. He was advised to undergo urethral reconstruction.

Address for correspondence: Dr. Atul Kakar,
Department of Internal Medicine, Sir Ganga Ram Hospital,
New Delhi, India
E-mail: atulkakar@hotmail.com

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urethral diverticula, ischemic necrosis of penis, pseudoaneurysm of bulbar artery, and iatrogenic hypospadias. Iatrogenic hypospadias is a rare clinical condition. There is limited data available about the incidence of catheter-induced iatrogenic hypospadias. Andrew et al. reported similar injury on 16 neurologically ill patients.[1] Prolonged indwelling urethral catheter produces downward pressure which may be due to larger size of Foley's catheter or improper technique of securing catheter, which interferes with blood supply of urethra causing ischemic effects. Small caliber catheters are preferred as they do not put pressure on urethral mucosa or glands. In our case, it was not properly secured with skin. The time interval between urethral catheterization and detection of hypospadias in our patient was 2 months and reported literature showed that hypospadias can develop anytime between 1 month and 16 years after urethral catheterization.[1] It is, however, not identified unless it is searched actively.

The location of abnormal urethral meatus classifies the hypospadias. Several different classifications have been described, but most surgeons use the classification proposed by Barcat and modified by Duckett.[2,3] The described locations include anterior (glandular and subcoronal), middle (distal penile, mid shaft, and proximal penile), and posterior (penoscrotal, scrotal, and perineal). The location is 50% in anterior, middle in 20%, and posterior in 30% cases; the subcoronal position is most common among all. The anatomical position of neo-meatus in this patient was glandular type.

Hypospadias has been treated with more than 200 diverse surgical methods. The surgical guiding principle is aiming at multiple goals including penile straightening (arthroplasty), urethroplasty, glansplasty, meatoplasty, scrotoplasty, and preputial reconstruction.[4] In order of frequency, urethrocutaneous fistula is a most common complication of surgical repair of hypospadias, followed by meatal stenosis, narrow neo urethra, and receding urethra.[5]

Although not a life-endangering condition, hypospadias has significant mental and physical consequences, as it involves surgical correction, and even after correction, individuals may experience sexual dysfunction and psychosocial difficulties later in life.

**Conclusion**

Urinary catheterization is a simple technique that can be performed by the physician or nurse. Because of a variety of possibly severe complications, it must be done only when unquestionably necessary. External male catheters or suprapubic catheterization may be considered in cases of prolonged catheterization. Nevertheless, it has to be remembered that although inserting urinary catheter is a simple procedure, yet proper insertional technique has to be followed such as aseptic precautions, 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.

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**Conflicts of interest**

There are no conflicts of interest.

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