

Penile Skin And Anterior Urethral Destruction Due To Chronic Indwelling Urinary Catheters

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Abstract

Permanent urethral catheterization is a predisposing factor for urinary tract infection. They need to be followed up and cared carefully. Patients with permanent urethral catheter should be followed up carefully regarding to urinary tract infections and urethral damage secondary to catheters. We are presenting a 83-year-old male patient with an enormous urethral destruction due to long-term catheterization.

INTRODUCTION

The two most frequent indications for chronic indwelling urinary catheters are urinary incontinence and bladder outlet obstruction (1). Although they relief the patient's urinary symptoms, these catheters can be dangerous devices in chronicle usage. They have many complications such as urethral bleeding (a marker of mucosal trauma, cracking, or ulceration), urinary trauma, obstruction, infection, renal damage, and mortality (1, 2).

Urethral destruction is a rare complication of chronic catheterization. It is most common in elderly people together with urinary infection and chronic disease (3). Tear of ventral penile skin and complete anterior urethral erosion are late and rare complications occurring after infection (3).

Herein, we are presenting a case of penile skin and anterior urethral destruction due to chronic indwelling urinary catheters.

CASE REPORT

A 83-year-old bedridden male patient with long-term catheterization for four years due to chronic urinary retention presented to our emergency department complaining of respiratory distress and complete destruction of the penile urethra and ventral penile skin. He was admitted to the intensive care unit due to respiratory failure and entubated. The patient had a history of hydrocephaly since 1997 and his cooperation was very bad for three years. Urethral catheter of the patient had changed a month ago at the last time. His medical history was unremarkable and had no chronic

disease except hydrocephaly. On inspection, a 7 cm length area of destruction on the ventral aspect of the distal penile shaft, skin and urethra was completely destructive up to the penoscrotal junction. The urethral mucosa exposed along the length of the destruction area (Figure-1).

Figure 1



Figure 1. Urethral destruction looks like penoscrotal hypospadias and urethral catheter was indwelled.

His relatives could not notice the urethral destruction.

Urinary examination revealed large amounts of erythrocyte and leukocyte, a little amorph urate but urinary culture was clear. Because of his predicament and old age, we did not offer any reconstructive operation. The urethral catheter was changed. He died due to cardio-pulmonary failure 3 days later.

DISCUSSION

Urethral catheters are one of the oldest medical devices that have been used for urinary retention on an intermittent or indwelling basis for centuries (1). Urinary incontinence and infravesical obstruction are two main reasons for use of urethral catheters. Complications of long-term catheter-associated bacteriuria divide in two groups. One of them is symptomatic urinary tract infection, fever, bacteriemia, and acute pyelonephritis. Some of these episodes may culminate with death. The other group is more often associated with long-term catheterization: obstruction, urinary tract stones, local periurinary infections, chronic pyelonephritis and with prolonged use, bladder cancer (1).

There are two main ways to carry the microorganisms in to the bladder even through the catheter or the space between the external surface of catheter and the urethral mucosa offers opportunity for bacterial passage. Bacteria make a biofilm layer around of the catheter and this layer protects bacteria from antibiotic penetration and urine flow (1). Additionally, urethral catheters may mechanically damage urinary epithelium and the glycosaminoglycan layer. Bacteria are also introduced by opening the system accidentally or by connecting and disconnecting a leg bag. The connection parts and sampling places must be disinfected carefully because of entry new microorganisms. In addition, raising the bag above the bladder, or failure to clamp the drainage spigot increases the risk of acquiring new bacteria.

Two bacteria types are most common in the long term catheterized urinary tract.

E. coli which adhered to uroepithelium just as they would in the noncatheterized urinary tract and *Providencia stuartii* which are rarely found outside the catheterized urinary tract and may use the catheter itself as a niche (1).

Antibiotic coated urethral catheters can be used in long-term catheterization but there is no advantage regarding to colonization of urinary tract (2). Patients with catheters in place have about 60 times more risk than patients without catheters to be bacteriemic over a 1-year period (4). There are other ways for urine catheterization such as condom drainage, suprapubic catheterization and intermittent catheterization. Condom catheters can be infected that they are not properly closed systems and not suitable for long-term usage. Bacterial colonization is not seen outer surface of catheter in intermittent catheterization. However, these group patients are generally old and need intensive care where the use of these catheters is so difficult. Suprapubic catheterization may be an alternative but any significant benefit has not been shown after 1 year compared with the urethral catheters. As a result, chronic indwelling urethral catheters may cause urethral destruction and penile skin erosion. Physicians and patients should be awake for these complications.

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