

The Management of Fournier's Gangrene Secondary to Traumatic Urethral Catheterisation

Travmatik Üretral Kateterizasyona Bağlı Fournier Gangreni'nin Tedavi Yönetimi

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ABSTRACT

Fournier's gangrene (FG) is a rare aggressive necrotising fasciitis of the genitalia. We present a FG case following traumatic urethral catheterization in spinal cord injury patient with suspected bladder cancer. We want to emphasize that bedside cystoscopy can be needed for deciding what we will do when the FG patient has concomitant suspected bladder cancer and that urethral catheterisation should be performed by expert hands.

Key Words: Fournier's gangrene, bladder cancer, traumatic urethral catheterization

ÖZET

Fournier gangreni (FG), genital bölgenin nadir fakat agresif seyreden nekrotizan fasiitidir. Şüpheli mesane kanseri olan spinal kord hasarlı hastada travmatik üretral kateterizasyonu takiben oluşan FG vakası sunmaktayız. Eşzamanlı mesane kanseri şüphesi olan bir FG hastasında ne yapacağımıza karar vermek için yatakbaşı sistoskopinin gerekebileceğini ve üretral kateterizasyonun uzman eller tarafından uygulanmasının iyi olacağını vurgulamak istedik.

Anahtar Kelimeler: Fournier gangreni, mesane kanseri, travmatik üretral kateterizasyon

Introduction

Fournier's gangrene (FG), which was first described by Jean Alfred Fournier in 1883, is a rapidly progressive and frequently fatal type 1 necrotising fasciitis of the perineum, perianal or genital areas (1,2). Predisposing factors include immuno-compromised patients such as diabetes mellitus, malnutrition, alcohol abuse and trauma to the genitalia, instrumentation or perineal surgery (3,4). The mortality associated with FG has still been high and approximately 20% to 30% (5).

Case Report

A 55-year-old man was consulted with foul-smelling purulent discharge with urine flow from the scrotum for 12 hours. There was a history of a unsuccessful foley catheter insertion 10 days ago to follow up urine extraction and hematuria for 2 days from condom catheter. The patient was bedridden due to spinal cord injury and no diabetes mellitus, not an alcoholic.

On visual inspection it was shown about 2x2,5 cm exudate in the middle of scrotum and approximately 3 cm necrotic skin surrounding this area. Physical examination revealed palpable crepitation in scrotum and bilateral pitting type of pretibial edema. His fever, heart rate and blood pressure was 38,7°C, 117 beats/min and 110/70 mmHg, respectively.

Laboratory studies exhibited hemoglobin: 11,2 g/dl, white cell count: 23,500/cm³, CRP: 29mg/dl, Procalcitonin: 3,51 ng/ml and some biochemical parameters were a little higher than normal range (serum creatinine: 1,6 mg/dl, blood urea: 91 mg/dl, random blood sugar: 129mg/dl). The patient was being treated with triple combined antibiotic (meropenem, vancomycin, colimycin).

All necrotic tissue (Figure 1a) was debrided urgently and sent for pathological examination (Figure 2a,b) while pus for culture. A traumatic urethral rupture was revealed during surgery and urethral reconstruction was performed over the silicon urethral catheter (Figure 1b).

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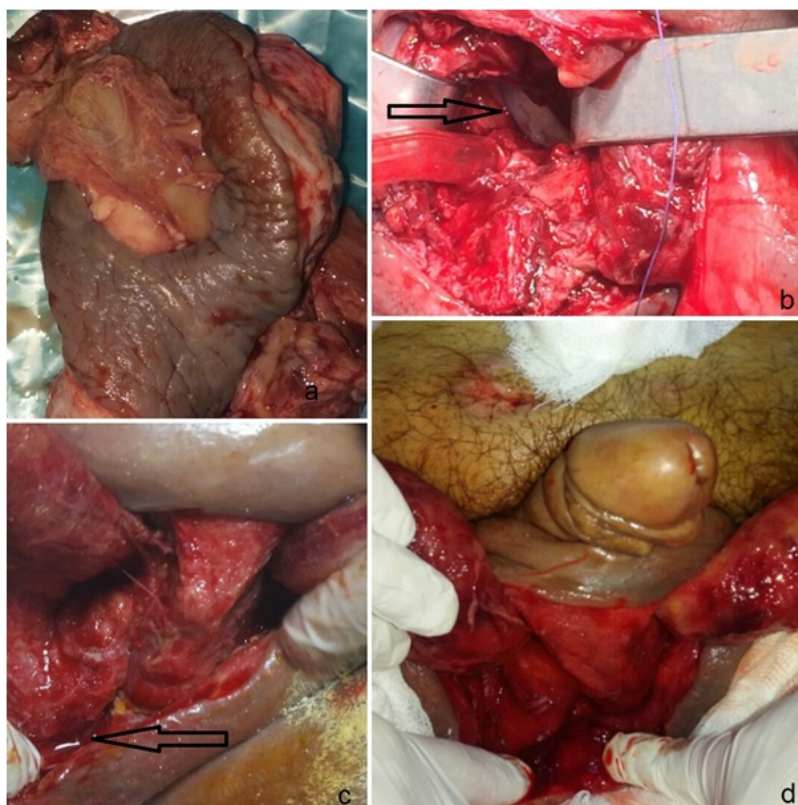


Fig. 1a) Necrotic tissue excised **b)** Traumatic urethral rupture area **c)** Purulent urine discharge from the urethral fistula **d)** Completely healthy tissue.

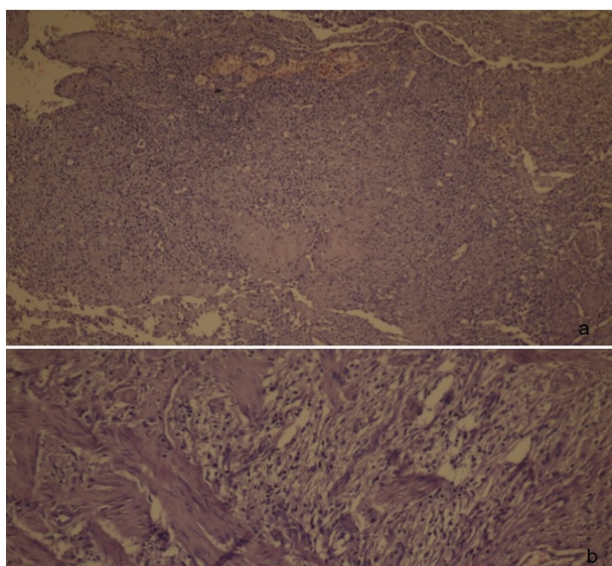


Fig. 2a) (H&E X 40) Commonly necrosis in skin-subcutaneous tissue, congestion and chronic active inflammation **b)** (H&E X 200) Necrosis extending to the deep muscle layer.

Postoperatively, ultrasound-guided suprapubic cystostomy placement was planned. However, increased anterior bladder wall thickness suspected bladder cancer was assigned. Wet dressing was performed to the patient by giving

up suprapubic cystostomy. Wound culture revealed *Klebsiella pneumoniae* and *Pseudomonas aeruginosa* was sensitive to antibiotic already administered. On the 7th postoperative day, urethral fistula which was preventing from healing the debrided area occurred (Figure 1c). Upon this, bedside cystoscopy was decided and performed. Onto bladder cancer was not shown, urethral catheter was removed while suprapubic cystostomy was inserted. On the 17th postoperative day, the wound got completely well (Figure 1d) and plastic surgeons planned reconstruction by a flap. On the other hand, the patient with respiratory distress got worse day by day and died on the 23th on postoperative day before reconstruction.

Discussion

FG which has frequently polymicrobial origin is a rare, but an acute urologic emergency with high mortality rates. Immunocompromised patients such as uncontrolled diabetes, malnutrition and alcohol abuse have the highest risk. Traumas to the genitalia including instrumentation or pelvic interventions are the other rare causes. The infections of anorectum, genital skin and

urogenital tract initiate the necrotizing process commonly (3-5).

FG divides three basic microbial subtypes in practice. Type I infections which are the most common form of FG are multimicrobial including gram-positive bacteria such as *Staphylococcus aureus*, *Streptococcus sp.* and gram-negative bacteria such as *Klebsiella sp.*, *Escherichia coli* and anaerobs. Type II is monomicrobial caused by *Streptococcus* or *Staphylococcus*. Type III infection is associated with *Vibrio vulnificus* although not universally accepted (3,4).

Palpable crepitation on physical examination and foul-smelling exudate with small necrotic areas of skin around erythema and edema are the most important signs (3,4). On diagnostic evaluation, conventional radiography, ultrasonography and computed tomography or magnetic resonance imaging to describe para-rectal involvement can facilitate diagnosis and disease management (6).

Surgical debridement of FG must be early (<24 h) and completely, with adequate fluid resuscitation and electrolyte therapy, mostly in the intensive care setting as well as parenteral broad-spectrum antibiotic therapy which covers all causative organisms (metronidazole, penicillin and third generation cephalosporin or aminoglycosides) (4,7).

While some authors recommend insertion of suprapubic catheter to all the FG patients, others suggest that only necessary like extensive urethral should be involved (8,9).

In conclusion, we present a FG case following traumatic urethral catheterisation in spinal cord injury patient with suspected bladder cancer which was initially caused avoiding from suprapubic catheter insertion. We recommend that urethral catheterisation should be inserted by expert hands and that cystoscopy must be performed for

clarifying the doubt before suprapubic cystostomy.

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