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# FOURNIER'S GANGRENE INVOLVING THE PENILE SHAFT

Surgery

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## ABSTRACT

Fournier's gangrene is a necrotizing fasciitis of the male genitalia and perineum mostly involving the scrotal skin that can be rapidly progressive and fatal if not treated promptly. Cases involving the penile shaft have been seldom reported and therefore it is worthy to discuss such a case to understand its management and causes.

## KEYWORDS

**INTRODUCTION:**

Fournier's gangrene (FG) is a rare necrotising soft tissue infection involving the perineal, perianal, and genital areas. [1] For a long time, it was considered an idiopathic condition. However, less than a quarter of the cases are currently classified as idiopathic. [2] In addition, many predisposing and etiopathogenic conditions such as immunodeficiency, diabetes, and alcoholism can participate in creating a favourable micro-environment that promotes the spread of the infection. [3] FG usually arises from an initial infection nidus in the genitourinary tract, which can extend rapidly, and sometimes in a fulminant fashion, causing multiple organ dysfunction, septic shock, and death. [4] The infection is polymicrobial in more than 80% of the cases. [5] Multiple bacteria (aerobic and anaerobic) act in synergy and disseminate in the region, leading to tissue necrosis [6] The most commonly isolated microorganisms are those normallyfound in the perineum and genital organs, including Escherichia coli, Klebsiella pneumonia, Bacteroides fragilis, and Staphylococcus aureus. [7] Some fungal infections have also been reported. [8]

The diagnosis is mainly made on a clinical basis by identifying characteristic crepitus and tender lesions. [9] Nevertheless, the clinical presentation may vary according to the patient's comorbidities and the degree of infection extension. [10] Therefore, imaging can be useful in atypical presentations; however, it should not delay treatment, since any delay can result in high mortality[11] Furthermore, laboratory investigations can be used to assess the risk of developing FG using the Laboratory Risk Indicator for Necrotising Fascitis (LRINEC) score. [12] However, this score has shown a limited sensitivity when used in an emergency setting. Moreover, the Fournier's Gangrene Severity Index (FGSI) has been developed to stratify the risks in FG patients and to predict mortality.[13]

The treatment of FG consists mainly of haemodynamic resuscitation, aggressive surgical debridement, and broad-spectrum antibiotics. [14] Surgical debridement represents a potential therapeutic option for FG management: Carvalho et al. reported that aggressive debridement resulted in a remarkable reduction in FG mortality of up to 16% [18] Furthermore, inactivation of the common pathogens isolated from FG patients, such as S. aureus, has been noticed following the application of in vitro photodynamic inactivation associated with methylene blue. [19] Despite these measures, the mortality remains high because of the delay in diagnosis and the lack of a specific care protocol. [20]

Comorbidities play an important role in determining the survival of FG patients. Tenório et al. indicated that diabetes, but not hypertension, was significantly associated with non-survivors when compared to survivors. [21] Fourniers gangrene with involvement of the penis is a rare finding hence it is worthy to discuss such cases.

**Case Report**

The patient is a 60 year old male farmer residing in East Indian state of Jharkhand.

The patient had following risk factors associated with fourniers gangrene:

- He is a known case of Type 2 Diabetes mellitus. However his blood sugar was under normal limits with an Hba1c of 6.5%.
- The patient is overweight with a BMI of 27.68
- Poor general hygiene associated with poor socio- economic status
- Chronic alcoholic

The patient presented with complaints of penile and scrotal swelling since 4 days along with blackening of scrotal skin since 2 days.There was history of fever for 2 days which was of mild degree continuous type associated with chills and rigour ,was relieved on taking medication with no aggravating factors. He had history of difficulty urination.There was no history of trauma,any other swelling or any recent operative intervention.

The patient's general condition was average at presentation but was oriented to time place and person .He was febrile and tachycardic. On examination of the genitalia he had a grossly edematous penis (figure 1) with skin changes on both the penile shaft and scrotum. The local temperature was raised and it was tender to palpate. The patient had noperineal injuries and his colorectal examination was unremarkable.

The patient had an elevated neutrophil dominant leukocyte count of 28,200 cells/cubic mm and elevated serum creatinine level of 5.30mg/dl. His liver function and coagulation profile was within normal limits.

Owing to the gross penile edema and to prevent further contamination immediate foleys catherisation was done. Peripheral venous access was obtained and he was started on IV renal safe broad spectrum antibiotics. IV diuretics were started owing to impaired renal function. The patient was I,,ediately shifted to OR and adequate debridment of the wound was done(figure 2). The patient was planned for further debridment and wound coverage after adequate control of infection.

Following 2 weeks of antibiotic therapy and multiple debridment sessions the patients fever subsided, his leukocyte count returned to normal range and his renal function improved. He was then undertaken for wound coverage and testicular implantation in the thighs. (Figure 4)

**DISCUSSION**

Fourniers gangrene is a lethal condition with high mortality if not addressed urgently. More common in males it occurs due to an underlying perineal abscess,trivial trauma but in manycases it can be without an underlying cause. Diabetes is an important risk factor. The condition tends to be limited to the scrotal skin and spares the testes.

Spread to penile skin was a rare observation in this case although the management remains almost the same

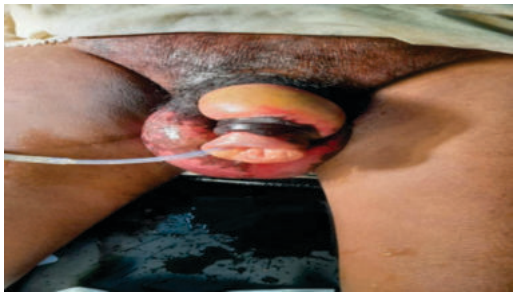
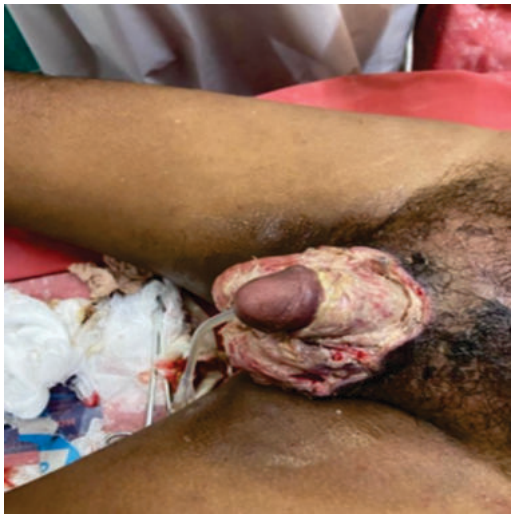


**Figure 1.**



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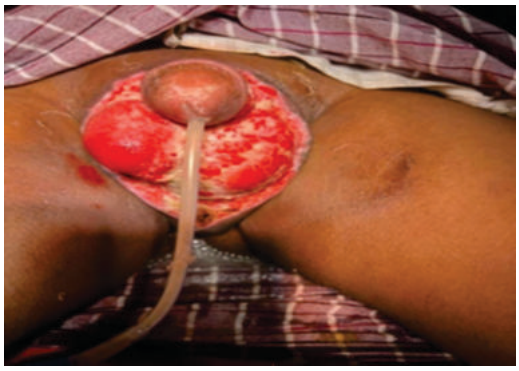

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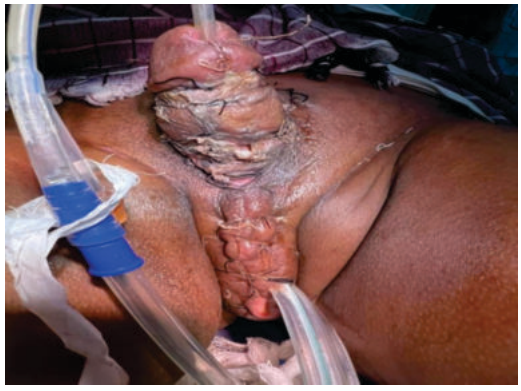

**Figure 4**