Case Report

Amputation of the penis and bilateral orchiectomy due to extensive debridement for Fournier's gangrene: Case report and review of the literature

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Abstract

Fournier's gangrene is a rare disease with rapidly progressive necrotising fasciitis of the genital, perineal and perianal regions and is known to have an impact in the morbidity and the mortality. Despite antibiotics and aggressive debridement, mortality rate is still high. We present a 79-year-old man who was admitted to School of Medicine, Harran University, Sanliurfa, Turkey, with painful swelling of penoscrotal region. Perineal examination revealed the entire perineal skin to be gangrenous, necrotic and foul smelling. Despite the aggressive drainage and broad-spectrum antibiotic therapy, the gangrene progressed rapidly in hours and the patient's general condition worsened. Secondary extensive debridement including bilateral orchiectomy and amputation of the penis was performed.

This disease may result in loss of organ such as testes and penis even with sufficient therapy.

Keywords: Fournier's gangrene, Bilateral orchiectomy, Amputation of the penis.

Introduction

Fournier's gangrene is a soft-tissue infection of the perineum that rapidly invades the surrounding tissues through the fascias such as Dartos, Colles and Scarpa but atypical

localizations of necrotizing fasciitis such as head and neck regions have also been reported.[1] This highly mortal infection is characterized by extensive necrosis due to the microthrombosis of small subcutaneous arterioles. Initially, erythema, pain and swelling are often the presenting symptoms and are frequently followed by crepitus, areas of gangrene and blister formation on the skin. Some conditions as Diabetus mellitus (DM), alcoholism, neurological deficits, malignancy, old age and immunosuppression are well known predisposing factors. The main approaches are immediate intense surgical debridement with appropriate or broad spectrum empiric antibiotics and fluid resuscitation. We present a case that progressed to penile amputation and bilateral orchiectomy.

Case Report

A 79-year-old man was admitted to School of Medicine, Harran University, Sanliurfa, Turkey, with painful swelling of penoscrotal region. There was no history of trauma or any concomitant disease. The patient was bedridden due to physical and mental inability for six months as result of senile dementia. Medical history was reported by the help of his relatives. In his systemic evaluation, there was decubitus ulceration, 3x3 cm in size, in the sacral region.

Perineal examination revealed the entire perineal skin to be gangrenous, necrotic and foul smelling (Figure-1). Despite of the aggressive drainage and broad-spectrum antibiotic therapy, the gangrene progressed rapidly in hours and the patient's general condition worsened. Secondary extensive debridement including bilateral orchiectomy and amputation of the penis was performed. After two days of admission in the intensive care unit, the patient expired due to sepsis and respiratory insufficiency.

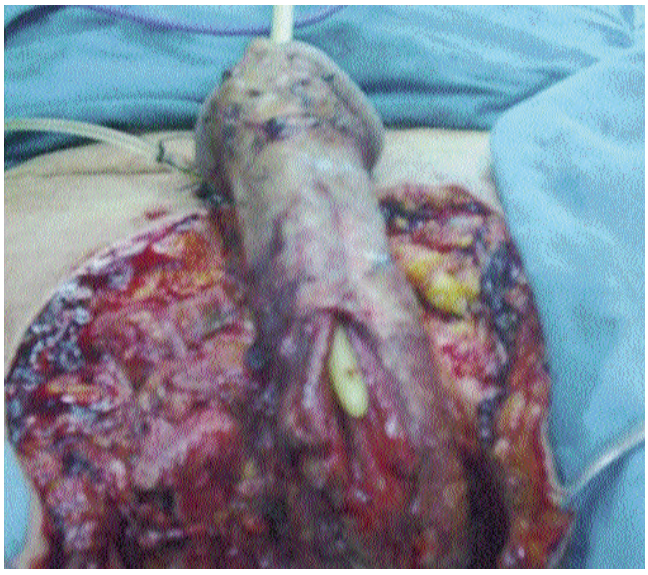

Figure-1: Fournier's gangrene in the scrotal and perineal region.

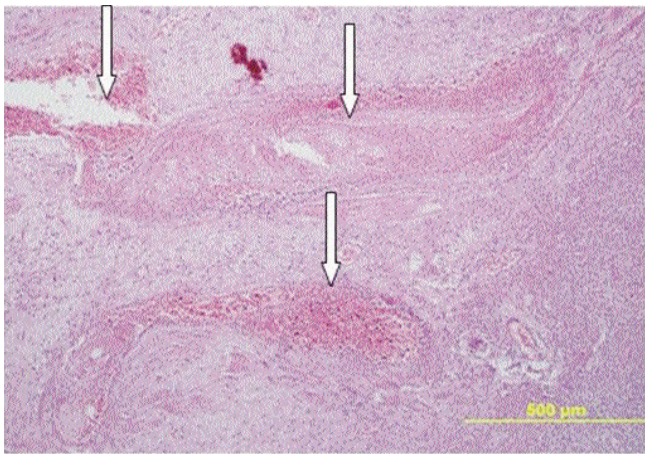

Figure-2: In the microscopical examination, necrosis, diffuse inflammatory infiltration were seen in the cavernaous body and vessels (H&E, x100) (Arrows).

Discussion

Necrotizing fasciitis is a rare but rapidly progressing fascial and subcutaneous soft-tissue polymicrobial infection, characterized by extensive necrosis due to the microthrombosis of small subcutaneous arterioles. This life-threatening infection is termed Fournier's gangrene, when it is initiated in scrotum or perineum, as first described by Alfred Jean Fournier in 1883.[1,2] Fournier's gangrene is a polymicrobial infection, including anaerobes that are supposed to give its typical foul odour.[3] Generally, Escherichia coli, Pseudomonas aeruginosa, Staphylococcus aureus and Bacteriodes (anaerobes) are reported as the main causative organisms.[4,5] The common sources of infection include urogenital and colorectal diseases or trauma to the skin of the perineum or scrotum.[6] In our case we presumed that the sacral decubitus ulceration could have been the reason for the initiation of the Fournier's gangrene. Progressive infection of the skin and soft tissue may cause necrosis and defects over the scrotal and perineal region, sepsis or even death.[6] The patient died due the sepsis and respiratory insufficiency. A medical history and physical examination are still the reference standard of diagnosis; a radiological evaluation (ultrasonography and computed tomography) can only be used for determining the extent of the disease.[4] Patients who have medical illnesses such as diabetes mellitus, cirrhosis of the liver, alcoholism, uraemia, malignancy, colorectal infection or urological disease, are at higher risk of developing the disease. Diabetes Mellitus is the most common predisposing factor for Fournier's gangrene.[7] However, in a larger series with 70 patients[4] no predisposing and comorbid factors were reported for most (60%), and this was termed idiopathic Fournier's gangrene. In this case, there was no history of trauma or any concomitant disease. The incidence and mortality rates are reported as 1/2000-7500 and 15-50%, respectively.[9]

Leading predisposing factor in studies with many patients were reported as Diabetes Mellitus, at a rate of 20-70%, and this group also had a high death rate.[4,8] Early diagnosis, administration of broad spectrum antibiotics and timely surgical debridement reduces the overall mortality rate. It is crucial to excise the necrotic soft tissue including skin, subcutaneous fat and fascia during the surgical debridement and to preserve as much of the normal tissue as possible.[9] The thick fascia restricts the penetration of the necrosis in necrotizing fasciitis so that organs such as testes and the cavernous body of the penis which are covered by tunica albuginua are protected in almost every case. Unfortunately, the infection invaded the inner testes and penis in this case (Figure-2). According to the literature, this is the second reported case with bilateral orchiectomy and amputation of the penis due to Fournier's gangrene. However, unlike the first one,[10] the invasion of the necrotizing infection into the tissues was pathologically confirmed in this case.

Conclusion

In conclusion, despite extensive therapeutic efforts, Fournier's gangrene remains a surgical emergency with high mortality. Early recognition with prompt radical debridement is the mainstay of management. This disease may result in loss of organs such as testes and penis even in the presence of sufficient therapy.

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