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Fournier gangrene

Figure 1.

This is a rare but rapidly progressive necrotizing fasciitis of the perineum; our patient died 2 hours after admission

An 88-year-old man with a 1-day history of fever and altered mental status was transferred to the emergency department. He had been receiving conservative management for low-risk localized prostate cancer but had no previous cardiovascular or gastrointestinal problems.

Physical examination revealed black discoloration of the rectal wall and perineum and the entire penis and scrotum (**Figure 1**). Computed tomography demonstrated subcutaneous emphysema in the scrotum.

Based on these findings, the diagnosis was Fournier gangrene. Despite aggressive treatment, the patient's condition deteriorated rapidly, and he died 2 hours after admission.

FOURNIER GANGRENE: NECROTIZING FASCIITIS OF THE PERINEUM

Fournier gangrene is a rare but rapidly progressive necrotizing fasciitis of the perineum with a high death rate.

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Predisposing factors for Fournier gangrene include older age, diabetes mellitus, morbid obesity, cardiovascular disorders, chronic alcoholism, long-term corticosteroid treatment, malignancy, and human immunodeficiency virus infection.[1,2] Urethral obstruction, instrumentation, urinary extravasation, and trauma have also been associated with this condition.[3]

In general, organisms from the urinary tract spread along the fascial planes to involve the penis and scrotum.

The differential diagnosis of Fournier gangrene includes scrotal and perineal disorders, as well as intra-abdominal disorders such as cellulitis, abscess, strangulated hernia, pyoderma gangrenosum, allergic vasculitis, vascular occlusion syndromes, and warfarin necrosis.

Delay in the diagnosis of Fournier gangrene leads to an extremely high death rate due to rapid progression of the disease, leading to sepsis, multiple organ failure, and disseminated intravascular coagulation. Immediate diagnosis and appropriate treatment such as broad-spectrum antibiotics and extensive surgical debridement reduce morbidity and control the infection. Antibiotics for methicillin-resistant *Staphylococcus aureus* should be considered if there is a history of or risk factors for this organism.[4]

Necrotizing fasciitis, including Fournier gangrene, is a common indication for intravenous immunoglobulin, and this treatment has been reported to be effective in a few cases. However, a double-blind, placebo-controlled trial that evaluated the benefit of this treatment was terminated early due to slow patient recruitment.[5]

A delay of even a few hours from suspicion of Fournier gangrene to surgical debridement significantly increases the risk of death.[6] Thus, when it is suspected, immediate surgical inter-

vention may be necessary to confirm the diagnosis and to treat it. The usual combination of antibiotic therapy for Fournier gangrene includes penicillin for the streptococcal species, a third-generation cephalosporin with or without an aminoglycoside for the gram-negative organisms, and metronidazole for anaerobic bacteria.

REFERENCES

1. **Wang YK, Li YH, Wu ST, Meng E**. Fournier's gangrene. QJM 2017; 110(10):671–672. doi:10.1093/qjmed/hcx124
2. **Yanar H, Taviloglu K, Ertekin C, et al**. Fournier's gangrene: risk factors and strategies for management. World J Surg 2006; 30(9):1750–1754. doi:10.1007/s00268-005-0777-3
3. **Paonam SS, Bag S**. Fournier gangrene with extensive necrosis of urethra and bladder mucosa: a rare occurrence in a patient with advanced prostate cancer. Urol Ann 2015; 7(4):507–509. doi:10.4103/0974-7796.157975
4. **Brook I**. Microbiology and management of soft tissue and muscle infections. Int J Surg 2008; 6(4):328–338. doi:10.1016/j.ijsu.2007.07.001
5. **Koch C, Hecker A, Grau V, Padberg W, Wolff M, Henrich M**. Intravenous immunoglobulin in necrotizing fasciitis—a case report and review of recent literature. Ann Med Surg (Lond) 2015; 4(3):260–263. doi:10.1016/j.amsu.2015.07.017
6. **Singh A, Ahmed K, Aydin A, Khan MS, Dasgupta P**. Fournier's gangrene. A clinical review. Arch Ital Urol Androl 2016; 88(3):157–164. doi:10.4081/aiua.2016.3.157

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