www.jcimcr.org

JCIMCR OPEN ACCESS Journal of Clinical Images and Medical Case Reports

ISSN 2766-7820

Case Report

Open Access, Volume 6

Fournier's gangrene: A life-threatening necrotizing fasciitis in females - Case report

Jayasooriya HK[1]*; Abeysinghe AHMGB[1]; Pathirana NPNB[1]; Abeysinghe AHMCD[2]

[1]Department of Surgery, Faculty of Medicine, Wayamba University, Sri Lanka.

[2]Faculty of Medicine, Rajarata University, Sri Lanka.

***Corresponding Author: Jayasooriya HK**
Department of Surgery, Faculty of Medicine, Wayamba University, Sri Lanka.
Email: kalhara98@gmail.com

Received: Apr 02, 2025
Accepted: Apr 23, 2025
Published: Apr 30, 2025
Archived: www.jcimcr.org

DOI: www.doi.org/10.52768/2766-7820/3573

Abstract

Fournier's Gangrene [FG] is a rapidly progressing and life-threatening necrotizing soft tissue infection that primarily affects the genital, perianal, and perineal regions. Though more prevalent in males, the mortality rate in females is higher due to delayed diagnosis and treatment. This report presents a 65-year-old female with poorly controlled diabetes mellitus who developed FG after two months of progressively worsening perineal swelling. Upon admission, she presented with fever, pain, and black discoloration in the affected area. FG was diagnosed, and urgent surgical debridement was performed. Broad-spectrum antibiotics were initiated, and the patient was stabilized. This case highlights the importance of early diagnosis, timely surgical intervention, and glycemic control in managing FG, emphasizing a multidisciplinary approach. Favorable outcomes can be achieved with prompt treatment, although managing risk factors such as advanced age, diabetes, and obesity is crucial.

Introduction

Fournier's Gangrene (FG) is a rare and life-threatening form of necrotizing soft tissue infection primarily involving the genital, perianal, and perineal regions. First described by Jean Alfred Fournier in 1883, FG has since been recognized as a severe condition with high mortality rates [1]. Although more common in males, the male-to-female ratio ranges from 10:1 to 40:1, with females having a higher mortality rate, often due to delayed diagnosis and atypical presentations [2,5]. This report discusses the pathophysiology, risk factors, diagnostic approach, and management of FG, emphasizing the importance of early recognition and intervention [3].

FG is a polymicrobial infection, typically caused by aerobic and anaerobic organisms, including Escherichia coli, Pseudomonas aeruginosa, and Staphylococcus aureus [5]. The infection leads to tissue necrosis through cytokine-induced thrombosis of blood vessels, resulting in gangrene [1]. If untreated, FG can progress to sepsis, multiorgan failure, and septic shock, making early diagnosis and intervention crucial [3]. Studies indicate that delayed treatment results in a high incidence of septic shock, which significantly impacts survival rates [6].

While FG is less common in females, certain anatomical features may explain its lower incidence. The female pelvic anatomy, with its superior drainage systems, may prevent the spread of infection [8]. However, when FG occurs in females, the infection may spread to the anterior abdominal wall, extending via Colle's fascia and leading to Meleney's gangrene [7]. Although it is less common for FG to involve structures like the thigh or vulva in women, when these areas are affected, it can result in severe complications [7].

Risk factors for FG include advanced age, diabetes mellitus, obesity, immunosuppression, and malignant neoplasms, with diabetes being the most consistent risk factor [5]. The rise in FG cases linked to Sodium-Glucose Cotransporter-2 [SGLT2] inhibitors, such as empagliflozin, is concerning due to their association with increased glycosuria, which can predispose individuals to genital infections [8].

Case presentation

A 65-year-old female with poorly controlled diabetes mellitus presented with fever, pain, and progressive swelling in the perineal region over the past two days. The patient had been experiencing swelling in the perineal area for approximately two months, which gradually spread to the perianal and vulvar regions. She had avoided medical attention due to embarrassment. One week prior to admission, the swelling turned black and became painful, accompanied by oozing from the site and high-grade fever.

Upon admission, the patient was hemodynamically stable, but her temperature was elevated, and her pulse rate was 100 beats per minute. Physical examination revealed signs of FG, including necrotic tissue in the perianal and perineal regions, as well as multiple fistulas. Urgent surgical consultation was obtained, and after clinical confirmation, immediate surgical debridement was recommended. Radiological investigations were deferred to prioritize surgery.

Intravenous antibiotics, including cefotaxime and metronidazole, were administered, and a urinary catheter was placed. The patient was taken to the operating room for extensive debridement. The wound was left open and packed with povidone iodine-soaked gauze rolls. Postoperatively, the patient remained stable, with no signs of sepsis or multiorgan failure. Endocrinology was consulted to optimize glycemic control, which aided in the healing process.

Five days after surgery, the patient was discharged on oral antibiotics, with instructions for follow-up visits to monitor wound healing. Subsequent follow-up visits showed healthy granulation tissue formation, with no signs of infection or complications. The patient's recovery continued with ongoing glycemic control and wound management.

Figure 1: Picture showing buttocks and perineum which showing extensive necrotic tissues in the perianal, vulval and perineal region with visible fistula.

Discussion

Fournier's gangrene is a rare but rapidly progressing condition, with a male-to-female ratio of 10:1 to 40:1 [2,4,5]. Despite its rarity in females, FG presents unique challenges due to delayed diagnosis and atypical presentations. In this case, a 65-year-old female with poorly controlled diabetes developed FG, highlighting the increased risk in patients with underlying comorbidities.

The pathophysiology of FG involves polymicrobial infections, often with E. coli and P. aeruginosa as the predominant organisms. These bacteria release toxins that cause tissue necrosis through cytokine-induced thrombosis, impairing blood flow and leading to gangrene [5]. Our patient's progressive tissue necrosis, marked by black discoloration, was indicative of this severe condition.

Diabetes mellitus is a significant risk factor for FG, especially in patients with poorly controlled blood sugar levels. The impaired immune function and delayed wound healing in diabetic patients contribute to their increased susceptibility. Our patient's long-standing diabetes, coupled with the absence of SGLT2 inhibitors, made her more vulnerable to FG [3].

While FG is less common in females, it can present more extensively when it occurs. The infection in our patient spread from the perineum to the vulvar and perianal regions, illustrating the potential for extensive involvement in women [7]. The diagnosis of FG is primarily clinical, based on history and physical examination. Imaging may be used to assess the extent of tissue involvement, but it is secondary to immediate surgical intervention.

Management of FG involves timely surgical debridement, broad-spectrum antibiotics, and supportive care. In our case, early intervention with antibiotics and surgery prevented further systemic complications. Glycemic control played a critical role in wound healing and preventing recurrent infections [5].

Conclusion

Fournier's gangrene is a rare but severe condition that requires rapid diagnosis and intervention. Early recognition of the clinical signs, including necrosis and erythema, is crucial for timely treatment. Prompt surgical debridement, broad-spectrum antibiotics, and careful monitoring for sepsis and organ failure are essential to improve outcomes. Multidisciplinary care, including glycemic control, is critical in managing complex cases and promoting recovery. Despite the poor prognosis, early intervention significantly enhances survival rates and long-term quality of life.

References

1. Barnes EN, Arvelo E, Fountain MW. An Uncommon Case of Fournier's Gangrene in a Female Patient. Cureus. 15(12): e50906.
2. Beecroft NJ, Jaeger CD, Rose JR, Becerra CMC, Shah NC, Palettas MS, et al. Fournier's Gangrene in Females: Presentation and Management at a Tertiary Center. Urology. 2021; 151: 113-7.
3. Chernyadyev SA, Ufimtseva MA, Vishnevskaya IF, Bochkarev YM, Ushakov AA, Beresneva TA, et al. Fournier's Gangrene: Literature Review and Clinical Cases. Urol Int. 2018; 101[1]: 91-7.
4. Sorensen MD, Krieger JN. Fournier's Gangrene: Epidemiology and Outcomes in the General US Population. Urol Int. 2016; 97(3): 249-59.
5. Zubair R, Azam AM, Fatima M, Azam MM, Shah AM, Rehman Khan MA, et al. Fournier's gangrene in a female: A case report. SAGE Open Med Case Rep. 2024; 12: 2050313X241243276.
6. Zingaro MD, Boni A, Vermandois JARD, Paladini A, Lepri E, Ursi P, et al. Fournier's Gangrene and Intravenous Drug Abuse: an

Unusual Case Report and Review of The Literature. Open Med Wars Pol. 2019; 14: 694-710.

7. Benjelloun EB, Souiki T, Yakla N, Ousadden A, Mazaz K, Louchi A, et al. Fournier's gangrene: our experience with 50 patients and analysis of factors affecting mortality. World J Emerg Surg WJES. 2013 Apr 1; 8[1]: 13.

8. Munasinghe KR, Rascon MA, J. D. Fournier's Gangrene: A Case Report. Medico-Leg J Sri Lanka. 2018 Dec 26; 6[2]: 84.

9. Malghem J, Lecouvet FE, Omoumi P, Maldague BE, Vande Berg BC. Necrotizing fasciitis: contribution and limitations of diagnostic imaging. Joint Bone Spine. 2013 Mar; 80[2]: 146-54.