



Fournier gangrene mimicking epididymo-funiculitis in a 63-year-old man in India: a case report

Mahek R. Mattikop¹ , Meganie Velosha Fernandes¹ , Mandati Santhosh Reddy¹ ,
Pratiksha Kini¹ , M. S. Ganachari¹ , Ramesh S. Koujalagi²

¹Department of Pharmacy Practice, KLE College of Pharmacy, Belagavi, India

²Department of General Surgery, Jawaharlal Nehru Medical College, Belagavi, India

Fournier gangrene (FG) is an uncommon but life-threatening condition characterized by rapidly spreading necrotizing fasciitis of the perianal, genital, or perineal regions and accounts for less than 0.02% of hospital admissions, with a reported fatality rate of 20% to 30%. Early diagnosis and prompt multidisciplinary management are essential for achieving optimal outcomes. A 63-year-old man presented with swelling in the right scrotal region. He underwent surgical incision and drainage followed by negative pressure wound therapy. Despite the severity of the presentation, the patient's prognosis was favorable. This case highlights the risk of misdiagnosing FG in the outpatient setting when initial symptoms resemble benign scrotal conditions and underscores the importance of rapid intervention. The involvement of a clinical pharmacist may enhance patient care by supporting the implementation of an optimized treatment strategy for FG.

Keywords: Early diagnosis; Gangrene; Genitalia; Negative pressure wound therapy; Necrotizing fasciitis; Case reports

INTRODUCTION

In 1764, Baurinn first described necrotizing fasciitis of the genital region, representing the earliest account of what is now known as Fournier gangrene (FG). After Fournier published a case series in 1883, the condition became widely recognized as FG [1]. The reported incidence is approximately 1.6 cases per 100,000 men annually, peaking at 3.3 cases per 100,000 men annually at 50 years of age [2]. FG demonstrates a strong male predominance, with a reported male to female ratio of approximately 10:1 [3]. The average fatality rate is 20% to 30%, with reported ranges from 18% to 50% [4]. Although FG remains uncommon overall, its prevalence is increasing among patients with HIV infection [5]. This case report emphasizes the importance of prompt diagnosis and early intervention in patients with FG.

CASE PRESENTATION

Ethics statement

Written informed consent for publication of the research details and clinical images was obtained from the patient.

Patient information

A 63-year-old male farmer with a body mass index of 22.8 kg/m² presented to the general surgery department with a 5-day history of swelling and pain in the right scrotal region after lifting a heavy rice sack. He had been previously healthy, with no known comorbidities or prior similar episodes. His history was significant for tobacco chewing for 40 years and alcohol consumption for 25 years; however, he had abstained from alcohol for the preceding 5 years. He lived with his family in a rural setting and was not taking any regular medications.

Received: May 12, 2025 Revised: November 7, 2025 Accepted: November 19, 2025

Correspondence to: Mandati Santhosh Reddy (santhoshreddy@klepharm.edu)

© 2026 Korean Society of Acute Care Surgery / Korean Society of Trauma & Acute Care Nursing

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc/4.0>).

The patient initially noted a small, painless swelling measuring approximately 2×2 cm on the right side of the scrotum. Over the subsequent days, it progressively enlarged to approximately 10×8 cm and was associated with intermittent throbbing pain and low-grade fever. He denied any history of trauma, urethral discharge, or prior genitourinary infection.

Clinical and diagnostic findings

On examination, the patient was afebrile and hemodynamically stable (blood pressure, 140/88 mmHg; heart rate, 70 beats per minute). Local examination revealed erythematous scrotal swelling, more pronounced on the right, with associated skin induration. Palpation demonstrated a fluctuant, tender, warm swelling. Transillumination was positive, suggesting a cystic inflammatory process (Fig. 1).

Laboratory investigations revealed leukocytosis (white blood cell count, $14.2 \times 10^3/\mu\text{L}$), hemoglobin 11 g/dL, serum creatinine 1.29 mg/dL, sodium 138 mmol/L, potassium 3.89 mmol/L, and bicarbonate 18.6 mmol/L, consistent with mild metabolic acidosis. Scrotal ultrasonography demonstrated bilateral epididymitis with thickened, edematous spermatic cords and an ill-defined fluid collection, more pronounced on the right, suggestive of funiculitis. Mild hydrocele and diffuse scrotal wall edema were also observed. Based on the clinical and imaging findings, a diagnosis of FG was established.

The Fournier's Gangrene Severity Index (FGSI) score was 7, and the Laboratory Risk Indicator for Necrotizing Fasciitis (LRINEC) score was 5, indicating moderate disease severity

with a favorable prognosis (Table 1).

Therapeutic intervention

Following initial stabilization with intravenous fluids and broad-spectrum antibiotics (piperacillin-tazobactam 4.5 g every 6 hours and metronidazole 500 mg every 8 hours), emergency surgical debridement with incision and drainage of necrotic scrotal and perineal tissue was performed under spinal anesthesia by an experienced laparoscopic surgeon with over 17 years of surgical expertise on the third day of



Fig. 1. Clinical presentation of Fournier gangrene. Right scrotal swelling with an ulcerated, fluctuant lesion is shown.

Table 1. Combined FGSI and LRINEC scores at admission

Variable	Patient value	Reference range	FGSI score	LRINEC score	Threshold for score
Temperature (°C)	37.4	36–38	0	-	-
Heart rate (bpm)	70	<100	0	-	-
Respiratory rate (breaths/min)	18	<20	0	-	-
Serum sodium (mmol/L)	138	135–145	0	0	≥135
Serum potassium (mmol/L)	3.89	3.5–5.0	0	-	-
Serum creatinine (mg/dL)	1.29	-	2	2	FGSI: 0.6–1.2 LRINEC: 1.2–1.9
Serum bicarbonate (mmol/L)	18.6	>20	2	-	-
Hematocrit (%)	33.6	37–47	2	-	-
Hemoglobin (g/dL)	11.0	-	-	1	11–13.5
Total white cell count ($\times 10^3/\mu\text{L}$)	14.2	-	1	1	FGSI: 4.5–11 LRINEC: 15–25
Glucose (mg/dL)	118	-	-	1	≥110
Total	-	-	7	5	-

FGSI, Fournier's Gangrene Severity Index; LRINEC, Laboratory Risk Indicator for Necrotizing Fasciitis; bpm, beats per minute.

admission. A second debridement was undertaken 10 days after admission to remove residual slough. Secondary suturing with split-thickness skin grafting was performed on day 20, after healthy granulation tissue had developed. The procedure was conducted in the lithotomy position. All devitalized tissue was excised until viable margins were achieved, and the wound was irrigated thoroughly with normal saline and hydrogen peroxide. Debridement extended to the scrotum and ventral surface of the penis. The scrotal wound was closed primarily using 3-0 Vicryl (Ethicon Inc) and 4-0 Ethilon (Ethicon Inc) vertical mattress sutures following separation of the testes. Definitive closure was achieved through secondary suturing and split-thickness skin grafting. A meshed split-thickness skin graft harvested from the thigh using a Humby knife was secured over the penile defect with 4-0 Ethilon continuous sutures.

Follow-up and outcomes

Postoperatively, negative pressure wound therapy (NPWT) was initiated using the vacuum-assisted closure system (KCI-VAC, Kinetic Concepts) with a polyurethane foam dressing, continuous suction at -125 mmHg, and dressing changes every 48 hours for 2 weeks. This approach promoted rapid granulation tissue formation and wound contraction. Wound cultures grew *Escherichia coli* and *Staphylococcus aureus*, both sensitive to β -lactam antibiotics. Antibiotic therapy was therefore de-escalated to ceftriaxone 1 g intravenously twice daily for 5 days, followed by oral trimethoprim-sulfamethoxazole double strength (one tablet twice daily) for 10 days. A clinical pharmacist monitored renal function, adjusted antibiotic dosages based on an estimated creatinine clearance of approximately 58 mL/min, evaluated potential drug-

drug interactions, and ensured adherence to culture-guided de-escalation. Supportive therapy included paracetamol for analgesia, trypsin-chymotrypsin (Chymoral Forte) for inflammation, and multivitamin supplementation. Over 6 weeks, the patient demonstrated progressive recovery, with complete epithelialization by week 6 and no evidence of recurrence or residual infection at follow-up (Fig. 2). The multidisciplinary management approach and early initiation of NPWT significantly shortened healing time and improved postoperative outcomes.

DISCUSSION

This case illustrates a presentation of FG in a 63-year-old man without diabetes, immunocompromise, or antecedent trauma. The probable etiology was progression of untreated funiculitis leading to localized tissue necrosis. The FGSI and LRINEC scores in this patient correlated with the observed clinical severity, supporting their utility for early risk stratification and management planning. The clinical course in this nondiabetic patient is consistent with previously reported cases describing rapid scrotal enlargement and relatively mild pain at onset, as reported by Sorensen et al. [2] and Hota [6].

Laboratory investigations demonstrated mildly elevated serum creatinine levels, which may suggest underlying chronic kidney disease. While Sockkalingam et al. [7] highlighted the potential impact of undiagnosed chronic conditions in similar cases, further evaluation would be required to clarify the role of chronic kidney disease in this patient. The favorable functional recovery and positive response to treatment, including the use of NPWT, underscore the importance of early

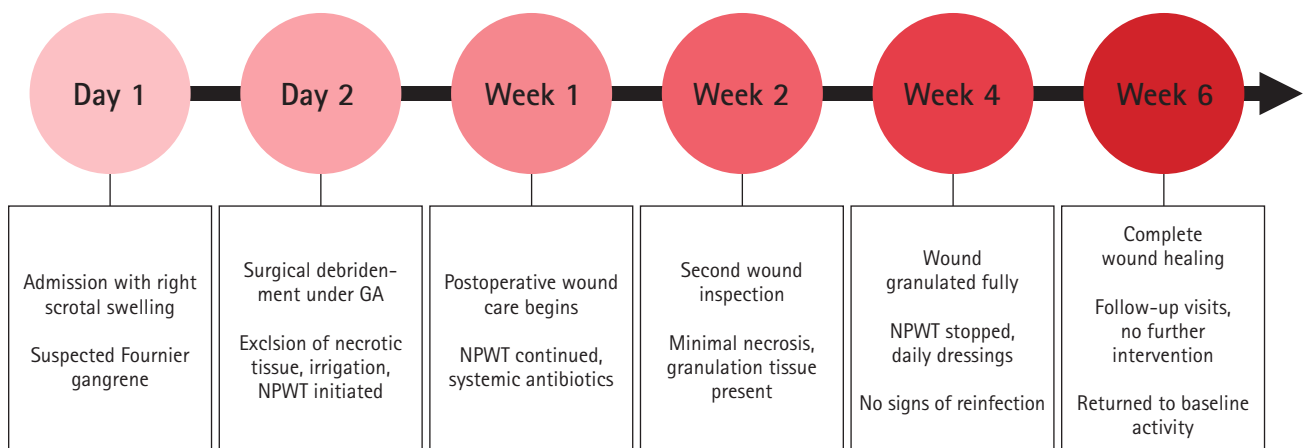


Fig. 2. Timeline of the clinical course and management. GA, general anesthesia; NPWT, negative pressure wound therapy.

intervention and a multimodal treatment approach. Optimal management of FG typically requires a multidisciplinary team consisting of general physicians, intensivists, urologists, infectious disease specialists, clinical pharmacists, and nursing professionals [4].

The total treatment duration was 6 weeks, with marked wound contraction and epithelialization observed by the fourth week, which was temporally associated with early initiation of NPWT. NPWT creates a controlled subatmospheric environment that enhances angiogenesis, promotes granulation tissue formation, and facilitates wound closure. In comparison, traditional wet-to-dry dressings have been reported to require approximately 8 to 10 weeks for complete healing, as described by Raizandha et al. [4] and Hota [6]. In this patient, the use of NPWT was associated with a shorter recovery period and a reduced risk of secondary infection or additional grafting procedures, supporting its role in the management of extensive FG wounds.

FG is a polymicrobial infection caused by a broad range of aerobic and anaerobic organisms. Empirical broad-spectrum antibiotic therapy is therefore initiated to cover likely pathogens. The clinical pharmacist reviews culture and sensitivity results and may recommend appropriate antimicrobial optimization, including narrowing therapy once pathogens are identified. Ongoing monitoring of antimicrobial resistance patterns is also essential. Clinical pharmacists contribute to patient safety by monitoring for adverse drug effects, such

as nephrotoxicity, and adjusting dosages or recommending alternative regimens when necessary. Patients with FG frequently have underlying conditions requiring multiple medications; careful medication reconciliation and interaction monitoring help prevent drug-related complications. Additionally, evaluation of appropriate dosage, duration, and combinations of prophylactic acid suppressants and other perioperative medications can be supported through review of electronic medical records and hospital information systems [8].

Table 2 summarizes reported cases of FG in patients without traditional comorbidities [1,4–6]. These reports emphasize that even immunocompetent individuals remain at risk and highlight the importance of prompt diagnosis and aggressive management.

This case underscores the importance of early diagnosis, timely surgical debridement, and coordinated multidisciplinary management in achieving favorable outcomes in FG, even among patients without traditional risk factors. It also highlights the role of evidence-based antibiotic stewardship, FGSI/LRINEC-guided assessment, and NPWT in facilitating recovery. The clinical pharmacist's involvement in optimizing antimicrobial therapy, minimizing drug-related complications, and supporting safe postoperative care contributed meaningfully to management. Although the outcome in this case was favorable, larger studies with extended follow-up are needed to improve understanding of disease progression

Table 2. Comparison of clinical presentation, interventions, and outcomes in reported cases of FG

Study	No. of patients	Age (yr)	Sex	Comorbidity	Clinical feature	Intervention	Outcome/observation
This case (2025)	1	63	Male	None	Epididymitis with scrotal edema → trauma (heavy lifting) → rapid progression to FG	Debridement + targeted antibiotics (based on culture) + NPWT	Full recovery in 6 wk; early NPWT shortened healing time compared to traditional dressing methods
Hota [6] (2012)	2	60	Male	One case with no comorbidity	Idiopathic	Prompt debridement + antibiotics	Prompt intervention and aggressive management helped in recovery
		65	Male				
Joury et al. [5] (2019)	1	48	Male	None	Perianal abscess	Extensive surgical debridement	Prompt surgical intervention and aggressive management helped in recovery
Raizandha et al. [4] (2022)	>20 ^b	-	-	Varied (some with, some without comorbidities)	Various (trauma, idiopathic, infection)	Hyperbaric oxygen therapy + surgery	Adjunct hyperbaric oxygen therapy improved healing
Oymacı et al. [1] (2014)	16	58 ^c	Male	Varied (some with, some without comorbidities)	NA	Perineal necrosis/necrotizing fasciitis	Approximately 10 patients without comorbidities had better prognosis

FG, Fournier gangrene; NPWT, negative pressure wound therapy; NA, not available.

^a) *Escherichia coli* and *Staphylococcus aureus*. ^b) Meta-analysis. ^c) Mean age.

and to further evaluate multidisciplinary strategies in this life-threatening condition.

ARTICLE INFORMATION

Author contributions

Conceptualization: MSG, RSK; Investigation: all authors; Supervision: MSG, RSK; Writing–original draft: MSR, PK; Writing–review & editing: all authors. All authors read and approved the final manuscript.

Conflicts of interest

The authors have no conflicts of interest to declare.

Funding

The authors received no financial support for this study.

Acknowledgments

The authors express their sincere gratitude to the principal, vice principal, head of the department, and faculty members of the Department of Pharmacy Practice, KLE College of Pharmacy for their invaluable support and guidance. The authors also extend their sincere thanks to the head and team of the Department of Surgery, KLES Dr. Prabhakar Kore Hospital and Medical Research Centre for their valuable support and cooperation. The authors are also grateful to the patient for their cooperation and for providing consent to conduct and report this work.

Data availability

Data sharing is not applicable as no new data were created or analyzed in this study.

REFERENCES

1. Oymacı E, Coşkun A, Yakan S, Erkan N, Uçar AD, Yıldırım M. Evaluation of factors affecting mortality in Fournier's gangrene: retrospective clinical study of sixteen cases. *Ulus Cerrahi Derg* 2014;30:85–9.
2. Sorensen MD, Krieger JN, Rivara FP, et al. Fournier's gangrene: population based epidemiology and outcomes. *J Urol* 2009;181:2120–6.
3. Leslie SW, Foreman J. Fournier gangrene [updated 2025 Feb 15]. In: StatPearls [Internet]. StatPearls Publishing; [cited 2025 Apr 1]. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK549821/>
4. Raizandha MA, Hidayatullah F, Kloping YP, Rahman IA, Djatisoesanto W, Rizaldi F. The role of hyperbaric oxygen therapy in Fournier's gangrene: a systematic review and meta-analysis of observational studies. *Int Braz J Urol* 2022;48:771–81.
5. Joury A, Mahendra A, Alshehri M, Downing A. Extensive necrotizing fasciitis from Fournier's gangrene. *Urol Case Rep* 2019;26:100943.
6. Hota PK. Fournier's gangrene: report of 2 cases. *Case Rep Emerg Med* 2012;2012:984195.
7. Sockkalingam VS, Subburayan E, Velu E, Rajashekar ST, Swamy AM. Fournier's gangrene: prospective study of 34 patients in South Indian population and treatment strategies. *Pan Afr Med J* 2018;31:110.
8. Wireko AA, Ohenewaa Tenkorang P, Tope Adebuseye E, et al. The importance of pharmacists in modern day surgery: editorial. *Int J Surg* 2023;109:88–90.