

Fournier's Gangrene Secondary to Neglected Suprapubic Catheter Balloon Calcification: A Case Report

Ayoub Mamad^{1*}, Mohammed Amine Elafari¹, Mohammed Amine Bibat¹, Moncef Midaoui¹, Pr. Amine Slaoui¹, Pr. Tarik Karmouni¹, Pr. Abdelatif Koutani¹, Pr. Khalid Elkhader¹

¹Urology B Department, Ibn Sina Hospital, University Hospital Center IBN SINA, University Mohammed V, Rabat, Morocco

DOI: <https://doi.org/10.36347/sjmcr.2026.v14i08.028> | Received: 19.06.2026 | Accepted: 04.08.2026 | Published: 22.08.2026

*Corresponding author: Ayoub Mamad

Urology B Department, Ibn Sina Hospital, University Hospital Center IBN SINA, University Mohammed V, Rabat, Morocco

Abstract

Case Report

Background: Fournier's gangrene is a life-threatening necrotizing fasciitis of the perineal and genital regions that requires urgent recognition and aggressive surgical management. Although several genitourinary sources have been described, Fournier's gangrene caused by neglected suprapubic catheter calcification remains uncommon. **Case presentation:** A 68-year-old man with a history of urethro-scrotal fistula and suprapubic cystostomy presented to the emergency department with severe sepsis and clinical features consistent with Fournier's gangrene. He had been lost to follow-up for one year, during which the catheter had not been exchanged. Examination revealed perineal and scrotal pain, inflammatory edema, and focal skin necrosis. The suprapubic catheter was non-functional because of complete obstruction related to extensive calcification of the intravesical balloon. Emergency management included hemodynamic resuscitation, broad-spectrum antibiotic therapy, extensive surgical debridement, removal of the calcified catheter, and placement of a new suprapubic cystostomy. Because scrotal skin loss was limited, the scrotum was reconstructed using the remaining viable scrotal tissue, allowing adequate testicular coverage. Definitive repair of the urethro-scrotal fistula was deferred until complete resolution of infection. **Conclusion:** This case highlights the importance of structured urological follow-up and routine catheter replacement in patients with long-term indwelling catheters. Catheter encrustation and balloon calcification may result in obstruction, infected urinary stasis, and life-threatening complications such as Fournier's gangrene. Prompt multidisciplinary management, including resuscitation, broad-spectrum antibiotics, aggressive debridement, appropriate urinary diversion, and staged reconstruction, is essential for favorable outcomes.

Keywords: Fournier's gangrene; suprapubic catheter; catheter calcification; urethro-scrotal fistula; necrotizing fasciitis.

Copyright © 2026 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

Fournier's gangrene (FG) is a rare but life-threatening necrotizing fasciitis involving the perineal, genital, and perianal regions. Although initially described as an idiopathic condition, FG is now recognized to be frequently associated with genitourinary, gastrointestinal, and perineal sources of infection, particularly in older patients and in those with impaired host defenses or microvascular disease. The infection is typically polymicrobial, involving both aerobic and anaerobic organisms, and may progress rapidly to sepsis, multiorgan failure, and death [1].

Long-term indwelling urinary catheters, including suprapubic catheters, are associated with well-recognized complications such as urinary tract infection,

catheter blockage, encrustation, stone formation, and local tissue injury. Catheter encrustation is commonly related to bacterial biofilm formation, especially by urease-producing organisms such as *Proteus mirabilis*. Urease activity alkalizes urine, promoting precipitation of calcium and magnesium phosphate crystals and progressive catheter obstruction [2-3]. In the absence of regular catheter exchange, extensive calcification may occur and can lead to complete obstruction, urinary stasis, and severe infectious complications.

Most recommendations emphasize regular assessment and timely replacement of long-term urinary catheters, with replacement intervals individualized according to catheter type, clinical context, and the patient's history of blockage or encrustation [4-5]. We report a case of life-threatening FG caused by complete

Citation: Mamad, A., Elafari, M. A., Bibat, M. A., Midaoui, M., Slaoui, A., Karmouni, T., Koutani, A., & Elkhader, K. (2026). Fournier's Gangrene Secondary to Neglected Suprapubic Catheter Balloon Calcification: A Case Report. *Sch J Med Case Rep*, 14(8), 1882-1885. <https://doi.org/10.36347/sjmcr.2026.v14i08.028>

obstruction of a neglected suprapubic catheter due to balloon calcification, occurring in the setting of a urethro-scrotal fistula.

CASE PRESENTATION

A 68-year-old man with a history of urethro-scrotal fistula complicated by scrotal abscess had undergone surgical drainage and suprapubic cystostomy one year earlier for urinary diversion and infection control. After the initial procedure, the patient was lost to follow-up, and no urological monitoring or routine catheter replacement was performed.

He presented to the emergency department with clinical signs of severe sepsis. Physical examination revealed perineal and scrotal pain, inflammatory edema, and focal areas of scrotal skin necrosis, strongly suggestive of Fournier's gangrene. The indwelling suprapubic catheter was non-functional, with no urinary output.

Laboratory investigations confirmed severe systemic inflammation and acute kidney injury. The white blood cell count was 24,500/mm³ with neutrophil predominance, C-reactive protein was 310 mg/L, and procalcitonin was 12 ng/mL. Renal function was impaired, with serum creatinine of 2.1 mg/dL and blood urea nitrogen of 45 mg/dL, consistent with obstructive uropathy in a septic context. Arterial blood gas analysis

showed metabolic acidosis, and serum lactate was 4.2 mmol/L, indicating severe sepsis.

The main precipitating factor was complete obstruction of the suprapubic catheter due to extensive calcification of the intravesical balloon. The obstruction caused infected urinary stasis, which worsened the pre-existing urethro-scrotal fistula and facilitated spread of infection into the scrotal and perineal soft tissues.

Emergency treatment included hemodynamic resuscitation and intravenous broad-spectrum empirical antibiotics. Urgent surgery was performed and consisted of extensive debridement of necrotic scrotal and perineal tissues until viable margins were reached, removal of the obstructed calcified catheter, and placement of a new surgical suprapubic cystostomy. Placement of the new cystostomy was technically challenging because the bladder could not be adequately distended, making localization and safe puncture difficult.

Postoperatively, the patient underwent regular wound care and close clinical monitoring. Because the extent of scrotal skin loss was limited, immediate scrotal reconstruction was performed by approximating the remaining viable scrotal tissue to provide adequate coverage of the testes. Definitive repair of the urethro-scrotal fistula was deferred until complete resolution of infection and stabilization of the local tissues. The patient is currently scheduled for elective reconstructive surgery.

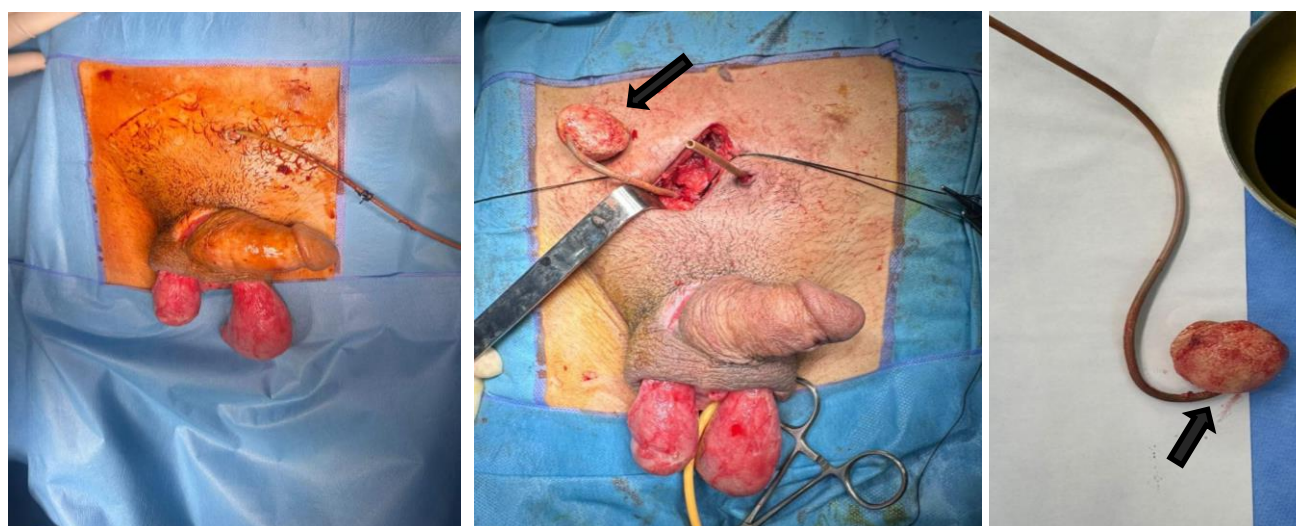


Figure: Intraoperative Findings and Removal of a Calcified Suprapubic Catheter Balloon

DISCUSSION

This case illustrates the potentially catastrophic consequences of inadequate follow-up in patients with long-term indwelling urinary catheters. Catheter encrustation and calcification are common complications of chronic catheterization and may culminate in complete obstruction. The process is often driven by urease-producing bacteria, particularly *Proteus mirabilis*,

which colonize catheter biofilms and increase urinary pH through ammonia production. This alkaline environment promotes precipitation of calcium phosphate and magnesium ammonium phosphate crystals, which can obstruct the catheter lumen or calcify the retention balloon [2-3].

In the present case, the one-year interval without urological review or catheter exchange far

exceeded usual recommendations and directly contributed to catheter obstruction. The resulting infected urinary stasis created favorable conditions for rapid progression of infection through the urethro-scrotal fistula into the perineal and scrotal soft tissues.

Fournier's gangrene usually arises from a genitourinary, gastrointestinal, or perineal source. In this patient, the urethro-scrotal fistula provided a direct communication between the urinary tract and scrotal soft tissues. Once the suprapubic catheter became obstructed, infected urine accumulated and tracked through the fistula, promoting necrotizing infection. The polymicrobial nature of FG, involving aerobic organisms such as *Escherichia coli*, *Klebsiella* species, and *Proteus* species, as well as anaerobic organisms such as *Bacteroides* and *Peptostreptococcus*, contributes to rapid tissue destruction through bacterial toxin production and thrombosis of subcutaneous vessels [1].

The cornerstone of FG management is urgent and aggressive surgical debridement of all necrotic tissue, combined with broad-spectrum antimicrobial therapy and hemodynamic resuscitation [6-7]. Repeated surgical assessment is often necessary, and serial debridement should be performed when residual necrotic tissue is suspected. In this case, early extensive debridement was appropriate and likely life-saving.

In this case, scrotal skin loss was limited, which allowed immediate reconstruction of the scrotum using the remaining viable tissue rather than testicular transposition or delayed reconstruction. This approach provided adequate testicular coverage while avoiding unnecessary relocation of the testes. In contrast, staged reconstruction or testicular transposition may be reserved for cases with extensive scrotal tissue loss or persistent local infection.

Adequate urinary diversion was also essential to prevent further contamination of the debrided tissues. In patients with urethral pathology, suprapubic diversion may be preferable to urethral catheterization because it avoids further urethral trauma and allows management of the underlying urethral lesion [9]. However, suprapubic catheter placement in the setting of a non-distended bladder and pelvic inflammation can be technically difficult and may require image-guided or open approaches to reduce the risk of bowel or vascular injury [9].

Deferral of definitive urethro-scrotal fistula repair was appropriate. Current reconstructive principles in Fournier's gangrene prioritize infection control, wound stabilization, and patient recovery before definitive repair [10]. This staged approach reduces the risk of reconstruction failure and allows better assessment of tissue viability.

This case underscores the need for structured follow-up protocols for patients with long-term indwelling catheters. Replacement intervals should be individualized according to catheter function, urine characteristics, history of blockage or encrustation, infection risk, and underlying urological disease [4-5]. Patient education is equally important, particularly regarding warning signs such as reduced catheter output, fever, suprapubic pain, perineal pain, foul-smelling urine, and local inflammation.

CONCLUSION

This case demonstrates that neglected suprapubic catheter maintenance can lead to complete obstruction from balloon calcification, infected urinary stasis, and life-threatening Fournier's gangrene. Regular catheter assessment and timely replacement are essential to prevent encrustation, obstruction, and infectious complications.

Management requires prompt resuscitation, broad-spectrum antibiotic therapy, aggressive surgical debridement, and reliable urinary diversion. When scrotal tissue loss is limited, immediate reconstruction with remaining viable scrotal tissue can provide adequate testicular coverage; more extensive defects may require delayed or staged reconstruction after infection control. More broadly, optimal care for patients with complex genitourinary pathology requires structured follow-up, patient education, and close multidisciplinary collaboration among urology, infectious disease, and wound care teams.

DECLARATION

Ethics approval and consent to participate: Written informed consent was obtained from the patient for the publication of this case report.

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

Declaration of interests: The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Funding: Not applicable

Acknowledgements: Not applicable

REFERENCES

- Montrieff T, Long B, Koyfman A, Auerbach J. Fournier Gangrene: A Review for Emergency Clinicians. *J Emerg Med*. 2019;57(4):488-500. doi:10.1016/j.jemermed.2019.06.023.
- Kuzaka B, Wroblewska MM, Borkowski T, *et al.*, Fournier's Gangrene: Clinical Presentation of 13

- Cases. Med Sci Monit. 2018; 24:548-555. doi:10.12659/msm.905836.
3. Shepherd AJ, Mackay WG, Hagen S. Washout Policies in Long-Term Indwelling Urinary Catheterisation in Adults. Cochrane Database Syst Rev. 2017;3:CD004012. doi: 10.1002/14651858.CD004012.pub5.
4. Stickler DJ. Clinical Complications of Urinary Catheters Caused by Crystalline Biofilms: Something Needs to Be Done. J Intern Med. 2014;276(2):120-129. doi:10.1111/joim.12220.
5. Sullivan N, AlRemeithi R, Pourmand A. Suprapubic Catheter Encasement by Bladder Stone. Am J Emerg Med. 2022; 56:395. e5-395.e7. doi: 10.1016/j.ajem.2022.03.031.
6. Cooper FP, Alexander CE, Sinha S, Omar MI. Policies for Replacing Long-Term Indwelling Urinary Catheters in Adults. Cochrane Database Syst Rev. 2016;7:CD011115. doi: 10.1002/14651858.CD011115.pub2.
7. Milligan J, Goetz LL, Kennelly MJ. A Primary Care Provider's Guide to Management of Neurogenic Lower Urinary Tract Dysfunction and Urinary Tract Infection After Spinal Cord Injury. Top Spinal Cord Inj Rehabil. 2020;26(2):108-115. doi:10.46292/sci2602-108.
8. Stevens DL, Bisno AL, Chambers HF, *et al.*, Practice Guidelines for the Diagnosis and Management of Skin and Soft Tissue Infections: 2014 Update by the Infectious Diseases Society of America. Clin Infect Dis. 2014;59(2):147-159. doi:10.1093/cid/ciu296.
9. Fletke KJ, Jeong DH, Herrera AV. Urinary Catheter Management. Am Fam Physician. 2024;110(3):251-258.
10. Tarasconi A, Perrone G, Davies J, *et al.*, Anorectal Emergencies: WSES-AAST Guidelines. World J Emerg Surg. 2021;16(1):48. doi:10.1186/s13017-021-00384-x.