

# Idiopathic Fournier's Gangrene in a Healthy Middle-Aged Male: Staged Debridement and Multicomponent Reconstruction

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## Background

- Fournier's gangrene (FG) is a rare but **life-threatening necrotizing infection** of the perineal and genital regions.
- Incidence of approximately **1.6 cases per 100,000 males**.
- Reported mortality rates ranging from **20% to 40%**.
- It is most commonly polymicrobial, arising from genitourinary, anorectal, or cutaneous sources.
- **Diagnosis** is primarily clinical and should not be delayed for radiologic confirmation.
- Requires **urgent management** with broad-spectrum antibiotics and immediate surgical debridement.
- The presentation underscores that systemic stability and low severity scores do not exclude advanced local fascial destruction.

## Abstract

- A 44-year-old previously healthy male with no comorbidities presented with rapidly progressive scrotal pain, swelling, and fever.
- Clinical evaluation and imaging confirmed necrotizing soft-tissue infection as shown in the **(figures A and C)**.
- The admission Uludağ Fournier's Gangrene Severity Index **(UFGSI) was 3**.
- The patient underwent urgent surgical debridement followed by staged reconstruction with excellent functional outcome.
- **This case highlights extensive disease in a healthy patient with low severity score, emphasizing early clinical recognition and prompt surgical referral.**

## Procedures

- The patient underwent immediate intravenous resuscitation and initiation of **broad-spectrum antibiotic therapy**.
- Emergent surgical exploration was performed, confirming extensive necrotizing fasciitis of the scrotal wall.
- **Complete debridement** of all non-viable tissue was carried out.
- After a period of wound stabilization and formation of healthy granulation tissue, a planned second-look procedure was conducted.
- Definitive reconstruction included **bilateral axial transposition flaps for penile root support and split-thickness skin grafts harvested from the thigh for scrotal and perineal coverage**.
- Tie-over dressings were applied to optimize graft adherence.

## Data and Results

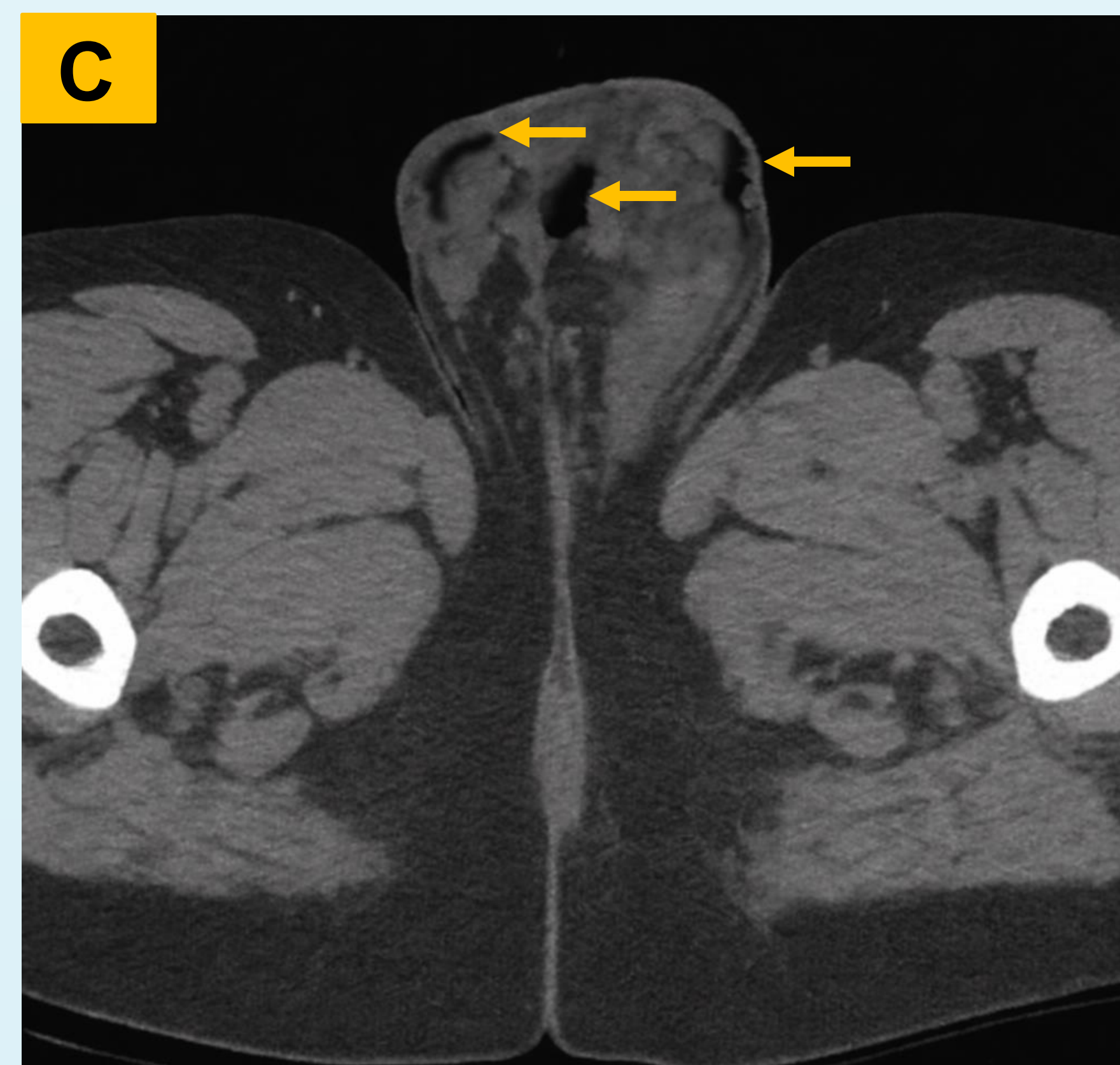
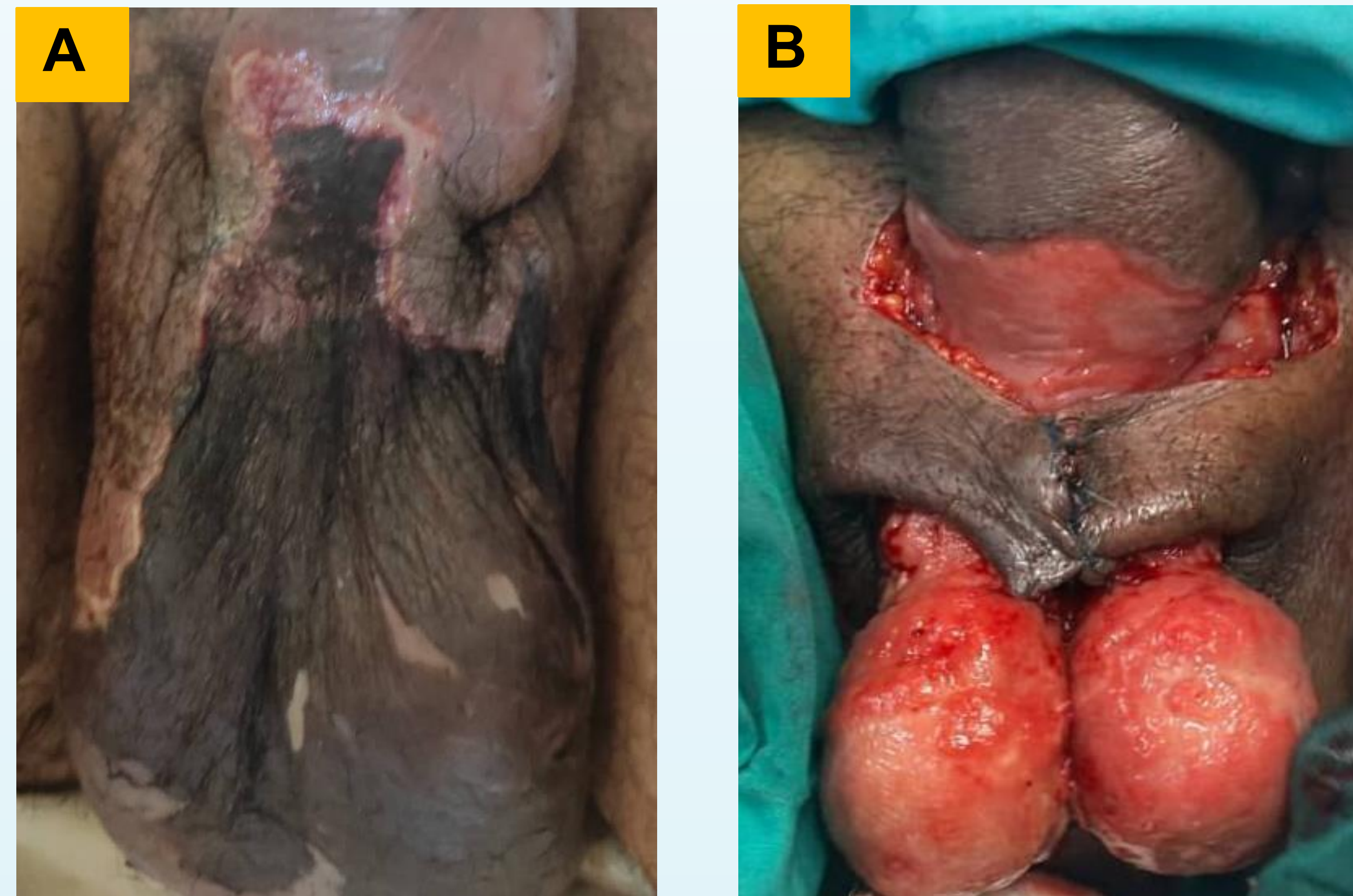
### Admission UFGSI Calculation

- Leukocytosis → **2 points**
- Disease confined to the urogenital region → **1 point**
- Age <60 years → **0 points**
- All other parameters within normal scoring ranges → **0 points**

**Total UFGSI of 3** is consistent with low predicted in-hospital mortality; scores  $\geq 9$  are associated with higher risk.

### Postoperative Outcomes

- No postoperative complications
- Preserved urinary and erectile function
- Satisfactory outcome at 3-month follow-up



## Discussion

- FG can initially present without significant systemic instability despite extensive fascial necrosis.
- UFGSI score of 3 underestimated the local tissue destruction, underscoring that severity indices predict mortality risk rather than disease extent.
- Idiopathic FG can arise outside classic high-risk groups.
- High clinical suspicion is essential in rapidly progressive perineal infections. Management followed a staged surgical approach:

### Stage I – Radical Debridement

Urgent surgical exploration revealed extensive scrotal necrotizing fasciitis with complete testicular exposure. Wide debridement achieved infection control while preserving viable testes due to intact vascular supply.

### Stage II – Reassessment

A planned second-look procedure after 7 days confirmed absence of residual necrosis and established a healthy wound bed.

### Stage III – Definitive Reconstruction

- **Bilateral axial transposition flaps** were used to reconstruct the penopubic junction, providing vascularized structural support and minimizing postoperative contracture as shown in **(figure B)**.
- **Four split-thickness skin grafts** (two scrotal, two perineal) restored surface coverage and anatomical continuity.
- For extensive scrotal defects (>50%), STSGs provide reliable coverage with high take rates and acceptable cosmetic results, while axial flaps offer durable structural stabilization.
- Tie-over dressings optimized graft adherence and reduced shear.

## Conclusion

- Fournier's gangrene can be idiopathic; **absence of comorbidities does not exclude the diagnosis**.
- Low UFGSI scores **do not rule out** extensive necrosis and must not delay urgent debridement.
- Clinical judgment and immediate surgical exploration remain the priority.
- Early staged debridement is essential for infection control.
- Defect-oriented reconstruction achieves excellent functional and cosmetic outcomes.

**Low UFGSI ≠ Limited disease**