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From Catheter to Catastrophe: Iatrogenic Urethral Injury Triggering Fournier's Gangrene

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Abstract
Fournier's gangrene is a fulminant form of necrotizing fasciitis involving the perineum and external genitalia, associated with rapid disease progression, systemic toxicity, and significant mortality. Although commonly linked to anorectal and genitourinary infections, iatrogenic urethral injury as an etiological factor is rare. We report a case of Fournier's gangrene precipitated by traumatic urethral catheterization with inadvertent balloon inflation in the perineum, resulting in urine extravasation and severe soft tissue infection. Early diagnosis, aggressive surgical debridement, broad-spectrum antibiotics, and appropriate urinary diversion were pivotal in management. This case highlights the importance of adherence to standard catheterization techniques and early specialist intervention to prevent catastrophic outcomes.

Keywords: Fournier's gangrene, necrotizing fasciitis, urethral injury, Foley catheter, urosepsis

Introduction
Fournier's gangrene (FG) is a rare, rapidly progressive necrotizing soft tissue infection involving the genital and perineal regions. It is typically polymicrobial in origin and predominantly affects individuals with predisposing conditions such as diabetes mellitus, chronic kidney disease, malignancy, or advanced age. Despite advances in antimicrobial therapy and intensive care, FG continues to carry high morbidity and mortality. Iatrogenic urethral trauma due to improper catheterization is an uncommon but preventable cause of FG. This report describes a rare presentation of FG secondary to traumatic urethral catheterization.

Case Report
A 62-year-old male presented with fever, chills, bilateral flank pain, and progressive scrotal swelling following urethral catheterization performed six days earlier. He had a history of old cerebrovascular accident with right-sided hemiparesis and ischemic heart disease with severe left ventricular dysfunction. On admission, the patient was febrile, septic, and had altered sensorium. Laboratory evaluation revealed marked leukocytosis, acute kidney injury, and hyperbilirubinemia. Local examination showed tense bilateral scrotal swelling with erythema, skin discoloration, and loss of rugosities. Emergency surgical exploration revealed extensive scrotal skin necrosis requiring wide debridement. Repeat exploration identified an inflated Foley catheter balloon located in the perineum with urine extravasation. The catheter was repositioned correctly under ultrasonographic guidance. The

patient improved following aggressive debridement, broad-spectrum antibiotics, and intensive supportive care.

Discussion

Fournier's gangrene is a synergistic polymicrobial infection involving aerobic and anaerobic organisms that promote tissue ischemia, thrombosis, and necrosis through toxin and enzyme production. Traumatic urethral catheterization may cause urethral disruption and urine leakage into perineal tissues, creating an ideal environment for rapid bacterial proliferation. Balloon inflation outside the urinary bladder is a known but avoidable complication. Early recognition and prompt surgical intervention remain the most critical factors influencing survival.

Conclusion

Iatrogenic urethral injury is a rare but preventable cause of Fournier's gangrene. Strict adherence to standard catheterization protocols, avoidance of forceful insertion, and early urological consultation in difficult cases are essential. Early diagnosis, aggressive surgical debridement, and multidisciplinary management significantly improve outcomes in this life-threatening condition.

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