

Case report

## A Rare Case of Fournier Gangrene after a Colostomy Closure

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### HIGHLIGHTS

- Fournier gangrene is a surgical emergency that presents as necrotizing fasciitis.
- The physical exam may be misleading as findings in early evaluation is minimal compared to the exact spreading of infection.
- A rare case of Fournier gangrene after a colostomy.

### ARTICLE INFO

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### Introduction

Fournier gangrene is a surgical emergency that presents as necrotizing fasciitis. It mainly involved the genital and perineal regions. It could be spread across the fascial planes proximally to the abdominal wall and distally even to the thigh (1). The predisposing factors are immunosuppression, diabetes mellitus, alcoholism, and surgical procedures. The underlying source of infection is usually recognizable in the anorectal, and genitourinary systems (2, 3). The polymicrobial etiology is evident in most cases. The physical exam may be misleading as findings in early evaluation, is minimal compared to the exact spreading of infection (4). A high index of suspicion is needed for early diagnosis of this condition,

### ABSTRACT

#### Introduction

Fournier gangrene is a surgical emergency that presents as necrotizing fasciitis. It mainly involved the genital and perineal regions. The predisposing factors are immunosuppression, diabetes mellitus, alcoholism, and surgical procedures. The underlying source of infection is usually recognizable in the anorectal and genitourinary systems. The physical exam may be misleading as findings in early evaluation is minimal compared to the exact spreading of infection. A high index of suspicion is needed for early diagnosis of this condition and management with broad-spectrum antibiotic therapy, and prompt surgical debridement.

#### Case presentation

In this case report, a case of Fournier gangrene that occurred after colostomy closure in a patient with a previous history of colostomy due to bowel obstruction was presented.

#### Conclusions

The patient had extensive gas formation from chest to mid-thigh proximally and distally respectively but managed with surgical debridement and planned for future reconstructive surgery.

**Keywords:** Fournier Gangrene; Colostomy; Surgical Debridement

and management with broad-spectrum antibiotic therapy and prompt surgical debridement. In this case report, a case of Fournier gangrene that occurred after colostomy closure in a patient with a previous history of colostomy due to bowel obstruction was presented. The patient had extensive gas formation from chest to mid-thigh proximally and distally respectively. The patient managed with surgical debridement and planned for future reconstructive surgery.

#### Case presentation

A 75-year-old man presented to our clinic with ambiguous pain in the lower abdomen and perineal region. He had a previous history of large bowel obstruction that underwent colostomy 4 months ago and then after 10 days before

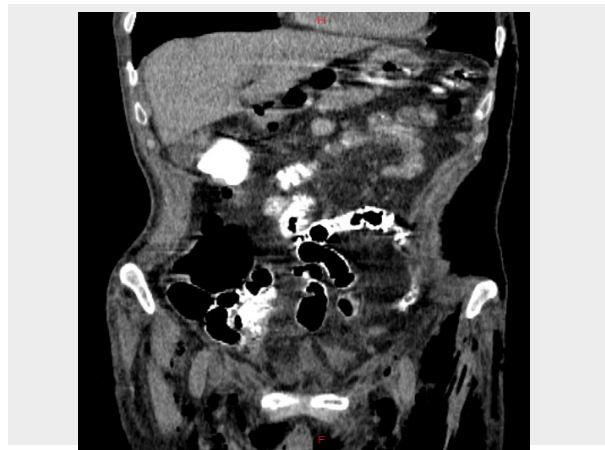


**Figure 1.** Normal appearance of the abdominal and scrotal area

referring to our center, colostomy closure was performed for the patient. In the laboratory test, he had leukocytosis, anemia, and elevated ESR; the other laboratory findings were in the normal range. In the initial physical examination, obvious crepitation in the lower abdomen has been revealed but there was no evidence of gangrene in superficial layers of the abdominal, scrotal and perineal regions (Figure 1). The abdominal computed tomography (CT) scan revealed gas formation in the entire abdominal wall and perineal regions that spread to the chest in the upper extension and mid-thigh in the lower extension (Figures 2 and 3). The broad-spectrum antibiotics were started immediately and due to extent of gas formation, general surgery and orthopedic consults were performed. The patient was managed with broad-spectrum antibiotics therapy and immediate surgical debridement. After surgical debridement of negative pressure wound, closure is applied to accelerate the wound healing. Three weeks after debridement, the plastic surgery consult was requested and lower abdomen and perineal reconstruction were performed. He was discharged from the hospital after 40 days and in 3 months follow-up, the healing was complete.

### Discussion

Fournier gangrene is necrotizing fasciitis that involved the genitourinary, perineal and lower abdomen but in some circumstances could invade beyond these areas and could be associated with high mortality unless managed with immediate surgical debridement. The predisposing factors are advanced age, diabetes mellitus, malignancy, immunosuppressive conditions, alcoholism, chronic kidney disease (CKD), and recent surgery. The source of infection usually could be identified and in most cases are anorectal and genitourinary origins. Our case occurred after colostomy closure in a previously obstructed large bowel in a patient without predisposing factor. Despite the extensive gas formation in the soft tissue of the abdominal



**Figure 2.** Gas formation in the soft tissue of the abdominal wall and perineal regions

and chest wall and inferiorly to the mid-thigh, the patient did not have any signs of the soft tissue swelling, erythema, and necrosis in physical examination, so underline that Fournier gangrene could be presented after any type of surgery and usually extent of disease is more than initial manifestations (5). Due to the low accuracy of the physical examination for estimating the fasciitis spreading, a high index of suspicion is needed for hasty diagnosis and early management with broad-spectrum antibiotics administration, surgical debridement, and control of underlying predisposing conditions (6, 7). In conditions that physical examination is suspicious, the abdominopelvic CT imaging could be helpful concerning the presence of gas in the soft tissue and extent of disease; as in our case, the gas extended proximally to the chest wall and distally to the thigh. The prognostic factors proposed for mortality are advanced age, delayed intervention, extensive soft tissue involvement, and chronic kidney disease (CKD). Interestingly association of diabetes mellitus with mortality is controversial (8). Although Fournier gangrene is associated with high mortality, early diagnosis and management are crucial for decreasing mortality despite predisposing factors.

### Conclusions

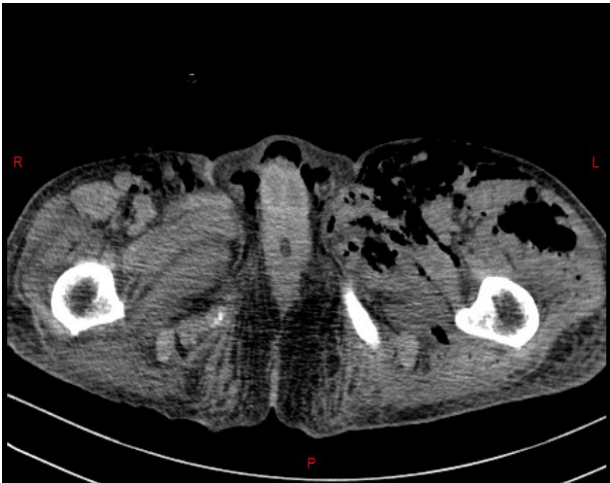
Fournier gangrene could be presented after any surgery. Usually, the extent of the disease is more than the initial manifestations. A high index of suspicion is crucial for hasty diagnosis and early management with broad-spectrum antibiotics administration, surgical debridement, and control of the underlying predisposing conditions.

### Authors' contributions

AM was the principal surgeon, suggested this novel method, and wrote the manuscript, AT was the surgeon.

### Acknowledgments

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**Figure 3.** Gas formation in the thigh soft tissue

University of Medical Sciences, Tehran, Iran.

#### Conflict of interest

All authors declare that there are no conflicts of interest.

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There is no funding.

#### Ethical statement

All authors ensured our manuscript reporting adheres to CARE guidelines for reporting of case reports.

#### Data availability

Data will be provided by the corresponding author on request.

#### Abbreviation

CKD Chronic kidney disease  
CT Computed tomography

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