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Treatment of Isolated Penile Fournier's Gangrene: A Case Report and Current Literature Review

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What is known on this subject?

Fournier's gangrene (FG) is rapidly progressive necrotizing fasciitis of genital, perineal and perianal regions. FG is occurs mainly in the perineum and scrotum. Isolated penile involvement is much rarer.

What this case report adds?

Data on isolated penile FG are extremely limited. In the literature, there are very few case reports of FG of the isolated penis. We think that it will contribute to these case reports. We also saw that different choices were made as a treatment such as radical or partial penectomy. In this case report, we have contributed to the trend of partial penectomy treatment by treating with partial penectomy.

ABSTRACT

Fournier's gangrene (FG) is rapidly progressive necrotizing fasciitis of genital, perineal and perianal regions. Usually seen in patients with accompanying predisposing factors. Here, we report a case of FG with isolated penile necrosis in a 70-year-old diabetic male patient with a permanent foley catheter who presented to the emergency department with the complaint of blackish discoloration and purulent discharge in the penis for 4 days. Examination of external genital area showed ulcerated and necrotic lesions on the glans and shaft of the penis and scrotum and testes were normal. Broad spectrum intravenous antibiotics were given and surgical debridement was performed. A penectomy was performed and a neo-mea was created. In the presence of FG of the penis, early diagnosis and aggressive surgical treatment increases the chance of survival.

Keywords: Fournier's gangrene, penectomy, penis, necrotizing fasciitis

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Introduction

Fournier's gangrene (FG) is rapidly progressive necrotizing fasciitis of genital, perineal and perianal regions. It is a disease with high mortality if untreated rapidly. This is usually observed in patients with accompanying predisposing factors (1,2,3).

FG mainly occurs in the scrotum and can spread to the perineum, penis and abdominal wall, but it is very rare that it first occurs in the penis (4). Here, we present FG of the isolated penis and its successful treatment.

Case Report

Seventy years old male presented in emergency with complaint of blackish discoloration and purulent discharge in the penis and increased body fever. Penile lesions started 4 days ago, fever started one day ago.

The patient was living with a permanent foley catheter and his catheter was renewed 1 month ago. He had had diabetes mellitus (DM) and coronary arterial disease for about 20 years. The patient's DM poorly controlled. It was learned from the history of the patient, that bypass surgery was recommended to the patient because three coronary vessels were obstructed, but the patient refused the operation because his surgical performance was low.

The patient's temperature was 39.8 °C, pulse 95 beats/min, blood pressure 105/65 mm of high, respiratory rate 20 breaths/min. Examination of the external genital area showed ulcerated and necrotic lesions on the glans and shaft of the penis (Figure 1). The scrotum and testes were normal. In laboratory examination, white blood cell: 22.000/dL, C-reactive protein: 250 mg/L, procalcitonin: 6 mg/dL, blood sugar: 450 mg/dL. Blood urea and serum creatinine levels were normal.

Figure 1. Necrotic tissues in the penis before surgery

After making the diagnosis of FG, broad-spectrum intravenous antibiotics were given, and emergency surgery was performed for surgical debridement and gangrenous tissue excision.

Cavernosal tissues were checked after the necrotic penis glans was excised. Necrosis was also observed in the cavernosal tissue and we decided to perform penectomy. The corpus cavernosum and urethra were separated and resected from the proximal of both cavernosal bodies and sutured. A partial penectomy was performed. After resection, the remaining urethra was spatulated and neo-mea was fixed on the penile stump (Figure 2). A suprapubic catheter was placed at the end of the procedure.

In the postoperative period, the patient did not have a fever. Insulin treatment was initiated to regulate blood sugar. Both blood glucose and other laboratory findings decreased dramatically after surgery. The dressing was repeated twice a day for 10 days and was operated for reconstruction after wound healing.

The skin flaps on the wound margins were closed primarily approximated to each other. The patient was discharged 5 days later with his foley catheter removed. After the catheter was removed, it was checked that the patient could sit and urinate. Suprapubic cystostomy was removed 3 weeks later.

Discussion

FG is an extremely rare disease that occurs in 1.6 cases per 100,000 men each year (0.02%-0.09%). Although it can be seen in women, it often occurs in men (2,5).

DM, advanced age, alcoholism, chronic steroid use, HIV infection, malnutrition and other conditions that suppress the immune system are predisposing factors for FG (1,2,3). In addition to these factors, traumatic conditions such as

Figure 2. (a) Separation of the urethra and both cavernosal bodies. (b) Penile stump after resection of cavernosal bodies

urethral catheterization, cavernosal injections and penile trauma may accompany the FG of the penis (4). Human bite, penile self-injection with cocaine, abrasion of the penis during oral sex, urethral stricture, and DM have been observed as predisposing factors for penile FG in the literature (6,7,8,9). The patient we presented; had predisposing factors such as DM, coronary artery disease and urethral catheter.

FG, which occurs mainly in the perineum and scrotum, isolated penile involvement is less common. This is probably due to the rich blood flow to the penis. In the literature, the FG of the penis consists of data shared as case reports (4,6,7,8,9,10).

FG is diagnosed by clinical examination. The treatment included aggressive surgical debridement and antibiotic therapy. Early diagnosis and early surgical treatment are critical for preventing mortality. Generally, the agent is polymicrobial, so broad spectrum antibiotics should be initiated. Surgical treatment should include excision of all necrotic and infected tissues. Predisposing factors, if any, should also be treated, such as blood sugar control.

Partial penectomy may be sufficient for limited FG in the penile glans, while total penectomy is required in advanced necrosis. In this study, since there was necrosis up to the proximal cavernosum, partial penectomy was performed and neo-mea was created.

In the presence of FG of the penis, early diagnosis and aggressive surgical treatment increase the chance of survival.

Ethics

Informed Consent: Permissions were obtained from the patient.

Peer-review: Externally and internally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: M.B., E.C.P., Concept: M.B., Design: M.B., Data Collection or Processing: M.B., E.C.P., Analysis or Interpretation: M.B., E.C.P., Literature Search: M.B., E.C.P., Writing: M.B.

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