



A Rare Case of Fournier's Gangrene of Female with type 2 Diabetes Mellitus

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ABSTRACT

Fournier's gangrene is relatively uncommon condition, especially in female patients. The literature suggests that Fournier's gangrene in women may arise from vulvar or Bartholin's gland abscesses or may result from hysterectomy or episiotomy. Here, we present a diabetic female patient with Fournier's gangrene without any history of abscesses, hysterectomy or episiotomy.

INTRODUCTION

Fournier's gangrene (FG) is a rapidly progressive necrotizing fasciitis of the perineal and genitourinary region¹. Most patients have underlying medical problems which cause a variable degree of immunosuppression². These medical problems include diabetes mellitus, alcohol abuse, renal insufficiency and steroid use. It has been proposed that the pathogenesis of FG involves synergistic poly microbial infection³.

Fournier's gangrene is relatively uncommon. The overall incidence is 1.6/100,000 in males but the incidence for females is unclear. The male-to-female ratio varies from 10:1 to 42:1 in the literature^{4,5}. This condition has also been described in children^{6,7}. Fournier's gangrene in women may arise from vulvar or Bartholin's gland abscesses or may result from episiotomy or hysterectomy⁸.

In this case, we report a daiabetic female patient who presented with Fournier's gangrene without a history of abscesses, episiotomy, or hysterectomy.

CASE REPORT

A 55-year-old woman presented to the emergency department (ED) with hyperemia, fever and pain on the perineal and infra pubic area, especially on the mons pubis. These symptoms were started 4 days ago. The patient had a history of diabetes mellitus (DM) for 6 months and on irregular treatment. Her blood pressure was 90/60 mm Hg, pulse rate of 120 beat/min and the urine was high colored.

On physical examination, the right side of mons pubis was hyperemic and foul smelling with gangrenous necrotic surface. The investigation reports showed leukocytosis (16000mm³), anemia (9g/dl) and elevated blood sugars (226mg/dl) with normal renal parameters. The physical examination findings and laboratory results were suggestive of Fournier's gangrene with type 2 diabetes mellitus as an initial diagnosis. Patient was started on piperacillin tazobactam empirically and after resuscitation patient was taken to

emergency surgery under spinal anesthesia and thorough debridement of all devitalized tissue was done. The culture report of tissue sample showed E.coli organism which was sensitive to amikacin but resistant to piperacillin tazobactam and she was given 5days of amikacin with metronidazole. Post operatively patient was managed with regular dressing, sitz bath and secondary suturing of the wound was done after 2 weeks.



PRE OPERATIVE IMAGE



POST DEBRIDEMENT



FOLLOWING SECONDARY SUTURING

DISCUSSION

Fournier's gangrene was first demonstrated in 1764 by Baurienne. There are so many predisposing factors described by various authors as seen in literatures. Though diabetes, old age, alcoholism, obesity, paraplegia and renal insufficiency are commonly encountered. However, it is interesting to note that in almost 30% to 50% cases no definite predisposing factor is found⁹. The most commonly seen foci of infection are those arising from gastrointestinal tract (30% to 50%), genitourinary tract (20% to 40%), cutaneous injuries and soft tissue (20%)⁹.

FG is commonly a poly microbial infection of genitourinary or perianal source. However, the portal of entry is difficult to establish more often. Microbial invasion usually occurs either through direct injury or through a direct spread from urogenital organs or perforated viscous like colon, rectum, and anal orifice. In a meta-analysis, the portal of entry was found to be colorectal in 21%, dermatological in 19%, urogenital in 19%, where as in 36% of cases no definite portal of entry was established¹⁰.

There are 3 types of necrotizing soft tissue infections seen in practice. Type I is poly microbial in origin, where a combination of gram positive and gram-negative bacteria along with anaerobes are seen in culture. Type-II infection is mono microbial in nature, being usually caused by Group A streptococcus but may be associated with Staphylococcus aureus. Type II is less common as compared to Type I and usually seen in healthy, immunocompetent patients¹¹. There is also a Type III infection caused by Vibrio vulnificus.

Management of FG basically includes initial resuscitation with fluid therapy and restoration of cardiopulmonary function and aggressive surgical debridement of devitalized tissue along with broad spectrum antibiotics is the main stay of the treatment. Antibiotics may be modified after obtaining the culture report. The removal of all the devitalized tissue is important to stop the progress of the infection and simultaneous elimination of systemic effects of toxins and bacteria⁷. Multiple

sittings of surgical debridement may be required to achieve adequate local control of infection. Local wound care after surgical debridement is very important. Wet to dry dressings, dressings with vacuum-assisted closure devices (VAC dressing), and application of various topical agents have been advocated¹². We prefer daily wet dressing and topical application of povidoneiodine. With proper surgical debridement, local wound care and antibiotic therapy, healthy granulation tissue appears, and most of the times econdary wound closure can be done. However in significant tissue loss, any of the reconstructive procedure including various flap covers maybe considered depending on the case.

CONCLUSION

Fournier's gangrene is a serious surgical emergency and has a high mortality rate. Early diagnosis is extremely important. Broad spectrum antibiotics, followed by extensive surgical debridement remains the cornerstone of the therapy. Although Fournier's gangrene is mostly attributed to male gender, emergency physicians should also consider this disease in female patients, especially those who have comorbid diseases especially causing immunodeficiency like DM and present with findings suggestive of infection in the perineal area.

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