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Fournier's Gangrene in a Female Patient: Rare Case Report

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Authors' contributions

This work was carried out in collaboration among all authors. Author JV wrote the first draft of the manuscript. Author TBN managed the literature searches. Authors SS and SV were the operating surgeons. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Fournier's gangrene is a rare, rapidly progressive, necrotizing fasciitis of the external genitalia and perineum. It is predominantly a disease of males but very rarely can occur in females also. It is a surgical emergency. An early diagnosis including evaluation of predisposing and etiological factors, metabolic and physiological parameters with prompt resuscitation, aggressive surgical debridement, broad-spectrum antibiotic coverage, and continuous monitoring of all the parameters is essential for a good outcome. This will reduce the mortality and morbidity of the disease. In this study we are reporting Fournier's gangrene in a 56 years old diabetic female who was treated successfully with good outcome.

Keywords: Fournier gangrene; necrotizing fasciitis; female; management.

1. INTRODUCTION

Fournier's gangrene is a rapidly progressive necrotizing fasciitis of external genitalia and perineum. It was first described by Jean Alfred Fournier (1883) a dermatologist, in 5 young male patients, who had presented with a rapidly progressing fulminating infection of the

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superficial tissues of scrotum [1]. Being a rare disease, the incidence of Fournier's gangrene is 0.4-1/1,00,000 only [2]. It is associated with patients with multiple co-morbid conditions like diabetes mellitus, obesity, chronic renal insufficiency and immunosuppression. Non-specific signs of infection like erythema, hyperthermia or malaise may lead to misdiagnoses, which can lead to delayed surgical treatment and increased morbidity.

2. CASE REPORT

A 56 year old female with background history of uncontrolled diabetes was admitted with complaint of ulcer over both groin for a week. She had history of fever and burning micturation for more than a week, for which she was treated for urinary tract infection at a local hospital as out-patient basis. Then, her fever and malaise increased, with intense pain in the lower abdomen, both groin and external genitalia.

On physical examination, the patient was febrile, dehydrated and could not walk due to pain in the bilateral inguinal region. Weight: 88 kgs, height: 158 cms, temperature: 38.2°C, heart rate 92 per minute, blood pressure: 110/70 mmHg and capillary glucose level: 420 mg/dL. External genitalia and both inguinal region were edematous and erythematous with a necrotic patch of size 14 by 4 centimeters was seen extending over the right inguinal region and similarly a necrotic patch of size 8 by 5 centimeters over the left inguinal region. On palpation, there was localized warmth and severe tenderness with pus discharge from the wound edges. There were palpable inguinal lymph nodes also (Fig. 1).

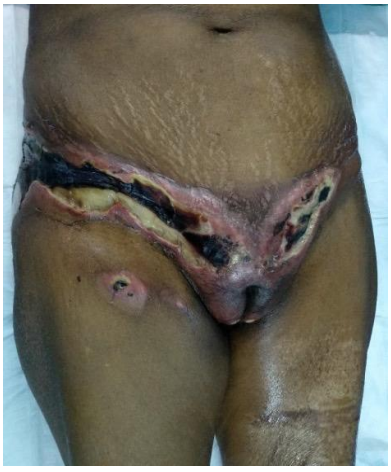

Fig. 1. Edematous, erythematous and necrotic regions over both inguinal region

After stabilizing the patient, she was wheeled in to the operating room and under general anesthesia, radical necrosectomy of the affected areas was done. Grey "dish-water" like toxic fluid and pus was drained and infected soft tissues were found to be extending far behind the visible necrotic areas of skin. Thorough debridement of infected tissues were done and sample tissues were sent for histopathological examination and culture-sensitivity (Fig. 2).

Fig. 2. Aggressive surgical debridement of necrotic tissues

Two more debridements were required at later stage, until the infection was finally controlled. The microbiological evaluation of the tissue samples revealed a poly-microbial infection with streptococci, various enterobacteria strains and anaerobic gram-positive organisms. Histo-pathological analysis, confirmed the diagnosis of necrotizing fasciitis. Antibiotics were continued and once wound became healthy, she underwent skin cover with secondary suturing. Post operatively she recovered well and was discharged.

3. DISCUSSION

Although Fournier's gangrene is predominantly seen in males, it is rarely reported in females mostly due to vulvar and Bartholin gland abscesses as well as in postoperative period following episiotomy and hysterectomy [3]. Though diabetes, old age, alcoholism, obesity, and renal insufficiency are proposed as predisposing factors, about 30% to 50% of diagnosed cases have no such history [4]. It is commonly a poly-microbial infection of

genitourinary or perianal source. There are 3 types of necrotizing fasciitis seen in clinical practice. Type I is poly-microbial in origin, (combination of gram-positive and gram-negative bacteria along with anaerobes), type-II infection is mono-microbial, (Group A streptococcus or Staphylococcus aureus) and type III being the rare one is caused by Vibrio vulnificus [5]. Fournier's gangrene is a clinical diagnosis. Plain radiography may show gas in the soft tissue. Lab values like low hematocrit, low-serum albumin, high blood urea nitrogen and serum creatinine, and high alkaline phosphatase have been shown as bad prognostic factors in various studies. Computed tomography has a greater value in knowing the extent of the disease [6].

Management of this disease is a multidisciplinary approach. Initial resuscitation with fluid therapy and treatment of septic shock is very important at the time of presentation. Early and aggressive surgical debridement of de-vitalized tissue along with broad-spectrum antibiotics is the main stay of treatment. Antibiotics may be modified according to the culture reports. Initial aggressive surgical debridement is important to stop the spread of infection and simultaneous elimination of systemic effects of toxins produced by bacteria [7]. Hyperbaric oxygen therapy (HBOT) have been tried in the management of Fournier's gangrene but the evidence of efficacy is still lacking [8]. It has been proposed to have bactericide and bacteriostatic effects on anaerobic pathogens [9]. Multiple sittings of surgical debridement may be required to achieve adequate local control of infection. With proper surgical debridement, local wound care, and antibiotic therapy, healthy granulation tissue appears and most of the time primary wound closure can be done. However in significant tissue loss, skin/flap covers may be considered [10].

4. CONCLUSION

Fournier's gangrene is a serious surgical emergency with a high mortality rate. However, with the advancement in diagnostic modalities, surgical technique and effective antibiotics the morbidity and mortality of this dreaded clinical entity has decreased over a period of time. It must be kept in mind as a differential diagnosis in females with such acute presentation. Early diagnosis and aggressive surgical debridement and appropriate antibiotics is the key to success in decreasing the morbidity and mortality associated with this disease.

CONSENT

As per international standard or university standard written patient consent has been collected and preserved by the authors.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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