

## **Case study**

### **CASE REPORT ON FOURNIER GANGRENE**

#### **Abstract**

**Introduction:** Necrotizing fasciitis of the perineal and vaginal region is a symptom of Fournier's gangrene, which is caused by a synergistic polymicrobial infection. The clinical presentation varies depending on the original aetiology, ranging from anorectal or vaginal pain with limited evidence of cutaneous necrosis to a rapidly spreading necrosis of the skin and soft tissue, to systemic sepsis without any obvious signs or symptoms.

**Case history:** A 65-year-old male who was admitted in hospital with the chief complaint of Scrotal enlargement, discomfort, hyperemia, pruritus, crepitus, and fever . There may also be a foul-smelling discharge. Symptoms usually appear during a two- to seven-day period. Soft-tissue gas may be present before clinical crepitus is detected. The patient with Fournier gangrene frequently seems poorly on physical examination, with prodromal signs of fever and lethargy lasting 2-7 days. Edema of the overlying skin is usually present, as is acute pain and tenderness in the genitalia; pruritus may also be present. Skin may show evidence of trauma, surgery, insect or human bites or injection sites, In Respiratory system, B/L Air entry present. In cardiovascular system, S1 and S2 sound heard and Patient get conscious and well oriented to time, place, and person. Then, as quickly as possible, treatment was began; he did not improve after treatment, and treatment would continue till the conclusion of my care.

**Conclusion:** We focus on professional management and superior nursing care in this study so that we may provide the complete treatment that Fournier Gangrene requires while also effectively managing the complex case. After a full recovery, the patient's comprehensive health care team collaborates to help the patient regain his or her previous level of independence and happiness.

**Keywords:** Fournier Gangrene, Necrotizing Fasciitis.

## **INTRODUCTION:**

Fournier gangrene (FG) is an uncommon but extremely contagious disease that causes fulminant necrotizing fasciitis in the vaginal and perineal areas.(1) This is one of the most dangerous surgical emergencies, with a 40% death rate.Early detection of FG is critical for determining the need to begin therapy.(2)Hemodynamic stability, broad-spectrum antibiotics, and timely surgical debridement are the mainstays of treatment.(3)

Necrotizing fasciitis of the perineal and vaginal region is a symptom of Fournier's gangrene, which is caused by a synergistic polymicrobial infection. (4)The clinical presentation varies depending on the original aetiology, ranging from anorectal or vaginal pain with no evidence of cutaneous necrosis to a rapidly spreading necrosis of the skin and soft tissue, to systemic sepsis with no appearance of sepsis.(5)

It's a polymicrobial necrotizing fasciitis of the perineal, perianal, and vaginal regions that spread quickly and have a fatality rate of 15% to 50%.Infection-induced inflammation and edema impede local blood flow, resulting in vascular thrombosis in the cutaneous and subcutaneous regions. PErifascial dissection occurs, resulting in the spread of bacteria and the advancement of the underlying tissues to gangrene. Fascial necrosis can progress at a pace of up to 2-3 cm per hour, making early detection critical.(6)

A patient with normal seeming testicles and signs and symptoms suggestive of an acute inflammatory condition, such as epididymitis or orchitis, had skin thickening and subcutaneous air found during a scrotum ultrasound (US).(7) Fournier gangrene was discovered in the patient Skin thickening and subcutaneous air expands posteriorly to include the perineum and buttocks in a growing number of patients. Because this combined anaerobic and aerobic infection has such a high death rate, it's critical to diagnose Fournier gangrene early so that the appropriate surgical and medical treatment may be started right away.(8)

## **PATIENT INFORMATION:**

A 65-year-old male who was admitted to the Acharya VinobaBhave Rural Hospital with the chief complaint of scrotal edema, discomfort, hyperemia, pruritus, crepitus and fever. There may also be a foul-smelling discharge. Symptoms usually appear during a two- to seven-day period. Prior to the appearance of illness, soft-tissue gas may be present. He was diagnosed with Fournier Gangrene after extensive research and evaluation. He showed no improvement following treatment, and his patient condition was in a state of flux. The patient's family is from a working-class family. Both communicable and non-communicable diseases were absent in his family. With relatives, neighbors, and other family members, he and his family maintained good interpersonal relationships. When he is admitted, he has a temperature of 102.0 degrees Fahrenheit. Blood was drawn, a liver function test was performed, and a kidney function test was performed. Antipyretics, antibiotics, anti-inflammatory potassium, intravenous fluids, and anti-allergic are all used in radiologic imaging, particularly computed tomography (CT) and magnetic resonance imaging (MRI). Treatment is provided as needed, and medicine is administered according to physician directions. Excellent nursing care was given and continues to be provided till the end of my stay.

#### **PHYSICAL EXAMINATION :**

The patient with Fournier gangrene frequently appears sick on physical examination. Fever and lethargy are prodromal symptoms that might last 2-7 days. Edema of the overlying skin is usually present, as is acute pain and tenderness in the genitalia; pruritus may also be present. Erythema, skin sloughing or necrosis, palpation of the genitalia and perineum, as well as digital rectal examination, may reveal induration, edema, blistering, skin discoloration, foul discharge, crepitus, and the absence of lymphangitis (lymphangitis is uncommon in Fournier gangrene). In Respiratory system, B/L Air entry present. S1 and S2 are heard in the cardiovascular system, and the patient becomes aware of time, place, and person. Then treatment was started as soon as possible.

#### **DIAGNOSTIC ASSESSMENT:**

Blood test : Hemoglobin –10.9 g/dl , Total Red blood count – 2.74million/cu.mm, Total white blood count- 6100/cu.mm, Total platelet count- 1.35lacs/cu.mm. T3, T4 and TSH were all

normal reading. Albumin- 2.2, Globulin-3.6. Increased leukocyte counts, urea, creatinine, kinase, alkaline phosphatase and lactate dehydrogenase. Decreased levels of hematocrit, bicarbonate, sodium, potassium, calcium and total protein. A prognostic index known, as the Fournier's Gangrene Severity Index (FGSI), determine the severity and prognosis of Fournier Gangrene in patients. By measuring the severity of infection using common vital indicators (temperature, heart rate, respiration rate) and laboratory data (serum sodium, serum potassium, serum creatinine). The FGSI score (e.g., serum bicarbonate, hematocrit, and white blood cell count) aids in prognosis and mortality prediction. The degree of deviation from normal is rated on a scale of 0 to 4, and the FGSI score is calculated by adding the individual values. A score of greater than 10 is related with a 75 percent chance of mortality, while a score of up to 9 is connected with a 78 percent chance of survival. FGSI scores greater than 10.5 had a 96 percent mortality rate, while those with a score less than 10.5 had a 96 percent survival rate. Researchers discovered that FGSI scores of at least 7 had a statistically significant effect on mortality rates ( $p < 0.05$ ), and then noted that FGSI scores were significantly high.<sup>7</sup>

#### **MEDICAL MANAGEMENT:**

The patient is orientated with time, person, and place upon admission. He shows no response to treatment after receiving it, and his health is not stable. Following the insertion of an intravenous line. Antibiotics with a broad spectrum of action, tab. Clindamycin 600 mg to 900 mg four times a day inj. Ciprofloxacin, Penicillin and Cephalosporin injections Piperacillin/Tazobactam 4g iv TDS, Pan 40 mg OD, Tab. Limcee OD, Cap. Urimax, Orofer-XT Syrup TDS 4 Hourly charting by RBS. Multivitamin 3 ml in 100 mL normal saline IV OD, Neomol 25 mL IV SOS, Ceftriaxone 750 mg IV BD, Syp. Paracetamol 5 mL orally SOS, as directed by the physician.

#### **NURSING MANAGEMENT:**

Vital indicators were meticulously recorded. His condition is not stable; he shows no reaction to treatment. The patient was extremely agitated. To help patients with Fournier Gangrene, the nurse will need to work diligently. Provided hemodynamic support with immediate resuscitation with fluids, and supplied broad-spectrum antibiotics to ensure the early and

aggressive surgical debridement of necrotized tissue.<sup>8</sup>As the rate of fascial necrosis has been noted as high as 2-3 cm per individualized therapy being the cornerstone for effective treatment. Broad-spectrum parental antibiotic therapy is administered empirically upon diagnosis of Fournier Gangrene. Instruct the patient on how to effectively manage edema and pain. Nurses keep a constant eye on the severity of necrotizing soft tissue. debridement's and supportive care were reported. After initial radical debridement, open wounds are generally managed with sterile dressings or negative-pressure wound therapy. Avoiding infection and skin deterioration Patient family members reported to nursing staff that excellent nursing care was delivered. Physical mobility is improved, discomfort and inflammation are reduced, and activity is increased.

#### **DISCUSSION:**

A 65 year old man was taken to the Acharya VinobaBhave Rural Hospital with the chief complaint of scrotal swelling, pain, hyperemia, pruritus, crepitus, and fever. A foul-smelling discharge may also be present. The onset of symptoms tends to occur over a 2-7 day period. Soft- tissue gas may be present prior to the appear to be ill. After all investigation and examination he was diagnosed as Fournier Gangrene. He has not responded to treatment and patient was very irritable. patient health status is not stable after treatment. Excellent nursing care was given and continues to be provided till the end of my stay.

Fournier Gangrene was found to be a rare yet dangerous condition in this investigation. This disease affects both men and women, and it affects people of all ages, from newborns to the elderly. Despite this, patients tend to be between the ages of 40 and 50. Our patient was 65 years old, which is consistent with recent findings of a rise in peak age incidence.(9)

Scrotal enlargement, discomfort, hyperemia, pruritus, crepitus, and fever are the most typical clinical characteristics. There may also be a foul-smelling discharge. Symptoms usually appear during a two- to seven-day period. Soft-tissue gas may be present before clinical crepitus is detected. Other systemic signs such as fever, tachycardia, electrolyte abnormalities, and scrotal discomfort are prevalent.Scrotal edema, crepitus, fever, tachycardia, and low blood pressure were all present when our patient was admitted to our hospital. (10)

Once a Fournier Gangrene diagnosis has been made, the mainstays of treatment are vigorous hemodynamic stabilisation and parenteral broad-spectrum antibiotics, which will be altered or continued based on the results of the culture. The crucial step in ensuring a favourable outcome is quick and comprehensive surgical debridement. Despite the use of broad-spectrum antibiotics, aseptic and antiseptic operating room conditions, advanced surgical methods, and intensive care circumstances, Fournier's gangrene remains a high-mortality pathology in Turkey. Because patients with Fournier's gangrene cannot fully describe their symptoms or allow a complete inspection of the genital region due to shame, diagnosis is sometimes made late. (11)

To reduce the high rate of mortality in Fournier's gangrene, early diagnosis, the use of appropriate antibiotics, and, when necessary, long-term hemodynamic support are required. Dressing the surgically debrided wound in a suitable manner. The nutritional requirements of the body for re-granulation of the tissues, monitoring the nutritional status of the patient, and giving supportive food supplement are all required. (12)

Despite the fact that Fournier's gangrene was first characterised as a gangrene of the penis and scrotum spreading fast in young male adults, it has recently been proven in the literature to be more common in instances of old age with predisposing conditions. Elderly individuals with inadequate self-care and nutritional status, on the other hand, are more prone to Fournier's gangrene, and their prognosis is worse. Consequently, slightest complaints in the perineal, genital and perianal regions, especially in elderly patients, should be evaluated carefully. (13)

#### **CONCLUSION:**

Fournier's gangrene is a rare, life-threatening emergency condition, and delays in diagnosis and treatment increase the rate of mortality. To keep the patient alive, make a diagnosis as soon as possible, start broad-spectrum antibiotics, perform emergency surgical debridement, support the patient's nutrition, and perform appropriate wound care. Fournier's gangrene is a life-threatening illness with a high death rate. As a result, active interdisciplinary treatment is required. The therapeutic strategy continues to include fluid resuscitation, antibiotic therapy, nutritional support, and, most crucially, repeated surgical debridement.

**Ethical approval :**

Not applicable

**Patient Inform Consent:**

While preparing a case report and for publication patients informed consent has been taken.

**COMPETING INTERESTS DISCLAIMER:**

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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