

The care of a patient with Fournier's gangrene

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ABSTRACT

Fournier's gangrene is a rare, necrotizing fasciitis of the genitals and perineum caused by a mixture of aerobic and anaerobic microorganisms. This infection leads to complications including multiple organ failure and death. Due to the aggressive nature of this condition, early diagnosis is crucial. Treatment involves extensive soft tissue debridement and broad-spectrum antibiotics. Despite appropriate therapy, mortality is high. This case report aimed to present nursing approaches towards an elderly male patient referred to the urology service with a diagnosis of Fournier's gangrene.

Key words: Case report; Fournier's gangrene; nursing diagnosis; patient care.

INTRODUCTION

Rarely observed in the peritoneum, genital and perianal regions, necrotizing fasciitis is named as Fournier's gangrene.^[1-5] It is an important disease, following an extremely insidious beginning and causing necrosis of the scrotum and penis by advancing rapidly within one-two days.^[1] The rate of mortality in the literature is between 4 and 75%^[6] and it has been reported that advanced age and delay in diagnosis and treatment of the condition increase the rate of mortality.^[3,4,6] The disease is observed more frequently in men than in women at a ratio of 10:1 and the frequency of occurrence gradually increases between 50 and 60 years of age.^[1,4,6]

In terms of etiology, it is a polymicrobial disease. Gram negative bacteria, gram positive bacteria, anaerobics, and fungi can be the causes of the disease.^[3,6] Even though the disease can appear with symptoms such as necrosis, pain, erythema, discharge, sensitivity, swelling, redness, and crepitation in the

perineal and genital regions, it is observed in a majority of cases with general symptoms, such as fever related infection and weakness, and without symptoms in the perineal region, negatively influencing the prognosis by causing a delay in diagnosis and treatment.^[2,3] Consequently, anamnesis and physical examination are extremely important. A very careful examination of the peritoneum in patients with general symptoms of infection, such as fever and weakness, is important for the diagnosis of Fournier's gangrene and the start of the treatment on time.^[4] Hypocalcemia is also a significant finding in early diagnosis. Diagnosis is made with CT and MR imaging, subcutaneous, dermis, fascia and muscle biopsies, and surgical drainage. Imaging techniques are also used during follow-up after surgery.^[3,4] The foundation of treatment consists the debridement of necrotic tissues, along with aggressive surgical intervention and broad-spectrum antibiotics.^[1,4]

The role of the nurse in the care of patients with Fournier's gangrene is to plan and implement suitable care of the patient,^[2] and educate the patient and family on the seriousness of the disease. Nurses should be sensitive towards their patients since their body image may change.^[6]

The objective of this case study was to emphasize the importance of suitable care for Fournier's gangrene, which occurs rarely but has a high rate of mortality. Nursing care was given according to Gordon's Functional Health Patterns model (1982) and the North American Nursing Diagnosis Association (NANDA).

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Ethical Considerations

The objective of the case report was explained to the patient and a written consent was obtained. Patient name was not mentioned in the case report.

CASE REPORT

A 69-year-old male patient, married with three children, came to the emergency service of a university hospital with complaints of dyspnea, lack of appetite, difficulty in swallowing, weakness, fatigue, and jaundice and was admitted to the gastroenterology clinic with cirrhosis of the liver. While receiving treatment in the gastroenterology clinic, complaints of skin defects and discharge from the scrotum and perineum started, and the patient was diagnosed with Fournier's gangrene and referred to the urology clinic.

Physical examination of the patient in the clinic showed a fever of 36.0°C, a pulse rate of 98/min., blood pressure of 140/100 mmHg, and a respiration rate of 26/min. The patient had complaints of dyspnea, lack of appetite, and weakness and was diagnosed with ineffective respiratory patterns and activity intolerance. Along with a height and weight of 1.75 cm and 120 kg, respectively, the Body Mass Index (BMI) of the patient was calculated as 39.1 (obese). Due to excessive weight, internal acid and Fournier's gangrene, a diagnosis of breakdown in physical activity, risk of situational low self-esteem, and nutrition exceeding body requirements was made. Laboratory findings of the patient were low for PLT (93 mm³), Hb (10.9 g/dl) and Htc (31.6%), but high for Gamma-GT (492 u/L), CRP (13.51) and FBG (133 mg/dL). It was found out that the patient had been consuming alcohol since the age of fifteen and had hypertension. There was a breakdown in health, which the patient connected to the use of alcohol, and lack of knowledge on the damaging effects of alcohol, and nursing interventions were applied. Anti-hypertension drugs, Cardopan Plus 2x1 and Amlodipin 1x1, and others including Pannet Tablet 1x1 as a stomach protector, Antiviral Zeflix 1x1, Hepamerz Granules 3x1 for liver treatment and the antibiotics, Seftiriakson Sodium 1000 mg and Flacon + Ornidazol 500 mg injections were started in the clinic. These were given on time and vital findings were monitored regularly.

Patient was taken into an emergency operation in the clinic and an extensive debridement was made. After the procedure, infectious diseases physician started Tazocin for the patient. The width of the wound was 5 cm and the depth was 3-4 cm. Daily dressings were made with 4x1 Rivanol. On the twelfth day after surgery, the patient consulted a plastic surgeon and his dressings and antibiotic therapy continued. The patient had a re-consultation with the plastic surgeon on the twentieth day and daily dressings and Rivanol continued. Care and treatment of the patient continued under isolation conditions. The patient was evaluated for risk of situational low self-esteem connected to social isolation and the disease. The patient was anxious and tense and his level of anxiety

in relation to the treatment was high. He was informed on the issues he was anxious about throughout his treatment and inaccurate information was corrected. The patient could not go to the bathroom and a pad was used under him for his need for defecation, and a urinary catheter was attached for urinary evacuation and monitoring what he ingested and evacuated. Due to the fact that the place of the wound was close to the anus of the patient, he was monitored for risk of infection after extensive tissue debridement and the use of an intravenous/urinary catheter. Hyper-hydration was determined in the follow-up of the 24-hour ingestion and evacuation of liquids by the patient. The patient's skin was dry and there was +2 degrees edema in his lower extremities and acid was present internally. Nursing interventions were made for the risk of breakdown of skin integrity connected to an excessive volume of liquids and edema, a decrease in secondary tissue nutrition/bleeding of acid, itching and anemia. An R2 diet (a liquid, soft diet) was implemented in the patient since he had an excessive volume of liquid and difficulty in swallowing hard and unsalted foods. The patient was monitored for risk of aspiration owing to difficulty in swallowing. Patient nutrition was followed closely as it is important to meet the nutritional needs of the body to provide for the regranulation of tissues in patients on whom extensive tissue debridement has been made.

The patient experienced trembling during sleep, causing a breakdown in his sleep pattern. He could not fulfill his role as a father because of his treatment process and hospital stay and a breakdown in intra-family processes and caretaking role were considered. There was a breakdown in verbal communication with lack of harmony between verbal and nonver-

Table 1. Nursing diagnosis

- Activity intolerance
- Anxiety
- Breakdown in physical activity
- Breakdown in the caretaking role
- Breakdown in the continuation of health
- Breakdown in the intra-family processes
- Breakdown in the pattern of sleep
- Breakdown in verbal communications
- Excessive volume of liquids
- Ineffective respiratory patterns
- Lack of knowledge
- Lack of self-care syndrome
- Nutrition exceeding body requirements
- Risk of aspiration
- Risk of breakdown of skin unity
- Risk of infection
- Risk of situational low self-esteem

bal communications connected to difficulty in speaking and pronouncing words. In terms of fulfilling daily activities, the patient was included into dependent patient category in the categories of standing, eating, walking and hygiene. In terms of general hygienic pattern, the patient had bad breath as he did not brush his teeth. He was given nursing care for lack of self-care syndrome. Table 1 shows nursing diagnosis for Gordon's Functional Health Patterns model and NANDA according to the findings obtained when the patient was evaluated for nursing care.

Treatment was planned in light of the findings obtained from the patient and was continued in an isolated room with a nursing care over a 28-day period covering the pre- and post-operative periods, and the patient was moved to the plastic surgery service on the twenty-eighth day to undergo a graft.

DISCUSSION

Even with the use of broad-spectrum antibiotics, aseptic and antiseptic conditions in the operating rooms, developed surgical techniques and intensive care conditions, Fournier's gangrene still exists in Turkey as a pathology with a high mortality.^[7] Generally, diagnosis is frequently made at a late period since patients with Fournier's gangrene do not completely describe their complaints or permit a complete examination of the genital region due to embarrassment.

Early diagnosis, early radical surgical debridement/s, the use of suitable antibiotics, and when needed, long-term hemodynamic support is required to decrease the high rate of mortality in Fournier's gangrene.^[8] Dressing the wound debrided surgically in a suitable manner,^[7] meeting the nutritional requirements of the body for re-granulation of the tissues, monitoring the nutritional status of the patient, and giving supportive food supplements are all important.^[6]

In spite of the fact that Fournier's gangrene was first described as a gangrene of the penis and scrotum spreading rapidly in young male adults, it has been shown in the recent literature as occurring predominantly in cases of an advanced age and having predisposing factors.^[4] In a study by Unalp et al. carried out in 2008 on patients with Fournier's gangrene, it was determined that the average age of the patients was 54.7 and that 10% of the patients died. They found that the average age of the patients who died was 66.7, whereas the average age of the patients who survived was 53.3 and that the rate of mortality was higher in those who were 60 years of age and older.^[8] It is stated in the literature that old age is not a predisposing factor; however, elderly patients with poor self-care and nutritional status are more susceptible to Fournier's gangrene and the prognosis is worse in elderly patients.^[9] Consequently, slightest complaints in the perineal, genital and perianal regions, especially in elderly patients, should be evaluated carefully.

Among the predisposing factors playing a role in the development of Fournier's gangrene are poor perfusion, hypertension, renal insufficiency, trauma, primary anorectal infections, diabetes mellitus, cirrhosis, malnutrition, immunosuppression, cigarette smoking, alcohol, dependence on intravenous drugs, malignities, inadequate nutrition, morbid obesity, and spinal cord injuries.^[1,2,4,8-10]

In this case study, the patient had been consuming alcohol for fifty-four years since the age of fifteen, had liver cirrhosis and a history of hypertension, and was excessively overweight (BMI: 39.1). Alcohol, cirrhosis, excessive overweight and hypertension in our case study suggested that these were predisposing factors for Fournier's gangrene, as also suggested in the literature.

People receiving Fournier's gangrene treatments are confronted with many serious concerns. When the medical team has made a diagnosis of a life-threatening condition and it is necessary for the patient to undergo a series of surgical interventions, including debridement, breakdowns in shape and function caused by extensive debridements can create anxiety in the person to varying degrees.^[6] Consequently, it is necessary to keep the patient and family informed on the seriousness of the disease from the beginning. The patient and family can be directed to a psychologist to receive consultation for loss of body image, weakness, and feelings of change in family dynamics. Nurses/health personnel should be sensitive and aware of the feelings in the patient on the breakdown in their body image.^[6] Patients should be encouraged to discuss their feelings on the disease, the treatment and their self-conception. Wrong information, if any, should be corrected.

Conclusion

Fournier's gangrene is a rarely occurring, life-threatening emergency situation and delays in its diagnosis and treatment increase the rate of mortality. In order to keep the patient alive, it is of critical importance to make a diagnosis as soon as possible, start broad-spectrum antibiotics, perform emergency surgical debridement, support the nutrition of the patient, and carry out suitable wound care. Consequently, the smallest complaints in the perineal, genital and perianal regions, especially in elderly patients, should be evaluated with care. These complaints should be considered within the pre-diagnoses of Fournier's gangrene and suitable care should be given to the patient.

Conflict of interest: None declared.

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OLGU SUNUMU - ÖZET

Fournier gangrenli hastanın bakımı

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Fournier gangreni genital bölgenin ve perinenin aerobik ve anaerobik bakterilere bağlı olarak gelişen ve nadir görülen nekrotizan fasiitidir. Bu enfeksiyon çoklu organ işlev bozukluğu ve ölüm gibi ciddi komplikasyonlara yol açmaktadır. Bu hastalığın agresif tedavisi için öncelikli olan tanının erken konmasıdır. Tedavideki asıl nokta, geniş doku debridmanı ile birlikte geniş spektrumlu antibiyoterapinin uygulanmasıdır. Tedaviye rağmen mortalite yüksek seyretmektedir. Bu olguda, Fournier gangreni tanısıyla üroloji servisine yatırılan yaşlı bir erkek hastaya yönelik hemşirelik yaklaşımları yer almaktadır.

Anahtar sözcükler: Fournier gangreni; hasta bakımı; hemşirelik tanısı; olgu sunumu.

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