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Original Research Paper

General Surgery

A RETROSPECTIVE STUDY OF 25 PATIENTS WITH FOURNIER'S GANGRENE

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ABSTRACT

Background: Fournier's gangrene is a rapidly progressing and life-threatening surgical emergency with high morbidity and mortality rates if not promptly diagnosed and treated. This study examines the outcomes of patients who were monitored and treated for Fournier's gangrene. **Methods:** We conducted a retrospective study on 25 patients treated for Fournier's gangrene between February 2022 and February 2025. Diagnosis was clinical, based on genital, perineal, or perianal tenderness, induration, foul-smelling discharge, and subcutaneous crepitus. After hemodynamic stabilization, aggressive debridement was performed, with some cases requiring VAC therapy and repeat debridements as needed. **Results:** This study included 25 patients: 2 (8%) females and 23 (92%) males, with a mean age of 55 years (range 35-75). The average hospital stay was 23.4 days, and the mean number of debridements was 2. Perianal abscesses were found in 15 (60%) patients, 21 (84%) had diabetes, 8 (32%) were HCV positive, and 20 (80%) were alcoholic. Escherichia coli was the most common organism (56%), though 78% had polymicrobial infections. All patients underwent extensive debridement; 12 (48%) required VAC therapy, which prolonged hospital stays. Colostomy was performed in 4 (16%) patients, and no deaths occurred. **Conclusion:** In Fournier's gangrene, early diagnosis, proper resuscitation, aggressive debridement, and VAC application in appropriate cases may help reduce morbidity, mortality, and the need for an ostomy.

KEYWORDS : Fournier's Gangrene, Necrotising Fasciitis, Debridement

INTRODUCTION

Fournier's gangrene is a severe, rapidly progressing necrotizing fasciitis that affects the genital, perianal, and perineal regions[1,2]. Delayed diagnosis and treatment can lead to extensive tissue death and high mortality rates. It often results from urogenital or anorectal infections and trauma, typically involving multiple bacteria[3,4]. While more common in men and older adults, it can affect any age or gender. Treatment requires prompt administration of broad-spectrum antibiotics and aggressive surgical debridement. Despite medical advancements, mortality rates remain between 16–50%[5,6]. Here we analyze etiological factors, predisposing factors and outcome associated with Fournier's Gangrene over a period of 3 years at Konaseema Institute of Medical Sciences and Research foundation, Amalapuram.

MATERIALS AND METHODS

We retrospectively reviewed records of patients treated for Fournier's gangrene at our hospital from February 2022 to February 2025. Diagnosis was based on clinical signs like genital, perineal, or perianal tenderness, induration, foul-smelling discharge, and subcutaneous crepitus. Patients were admitted, stabilized, and started on broad-spectrum antibiotics.

Informed consent was obtained before surgery. Necrotic tissue was debrided until healthy bleeding appeared, with some requiring a second debridement within 48 hours. VAC therapy was used in extensive cases, while others underwent secondary suturing or skin grafting.

Exclusions included patients with anorectal tumors, or simple skin infections. Data analyzed covered demographics, risk factors, infection site, debridements, VAC use, and hospital stay duration.

RESULTS

This is a study of 25 patients with 2(8%) were females and 23(92%) were males. The mean age of the patients was 55years (range: 35-75 years). The mean duration of hospital stay was 23.4. The mean number of debridements performed are 2. Males have higher incidence compared to females.

The etiology was perianal abscess in 15 patients (60%). Trauma was found to be etiology in 4 patients (16%). Etiology remained unclear in 6 patients (24%).

Twenty one patients (84%) had diabetes mellitus. Diabetic and non diabetic patients showed no significant difference in outcome. Eight patients (32%) were found to be HCV positive with no significant difference in hospital stay and outcome. Twenty patients (80%) were found to be alcoholic.

Broad spectrum antibiotics and Extensive debridement was done in all patients. Twelve patients (48%) needed VAC along with debridement. Patients who underwent VAC had longer hospital stay compared to rest of the patients without VAC. Diversion colostomy was done in Four patients (16%) because of sphincter involvement. No deaths occurred during the study.

DISCUSSION

Early diagnosis is crucial for successful treatment of Fournier's gangrene. Although imaging techniques like X-rays, ultrasound, CT, and MRI can help, diagnosis is typically based on physical examination, revealing pain, inflammation, edema, necrosis, and crepitation. In our study, diagnosis relied on physical examination. While it can affect all ages and genders, it is 10 times more common in men and frequently seen in the elderly due to weakened immunity and vascular issues. Its lower prevalence in women is linked to better perineal drainage via the vaginal route[7].

Fournier's gangrene is commonly caused by perianal, urogenital, and anorectal disorders, or surgeries in these areas. Abdominal and retroperitoneal infections may also contribute, along with postpartum episiotomy infections in women. Studies highlight perianal infections as the most frequent cause. In our study, 60% had a perianal origin, 16% had a history of trauma, and 24% had no identifiable cause (Table 1).

Fournier's gangrene risk factors include diabetes, obesity, cancer, alcoholism, advanced age, poor hygiene,

malnutrition, trauma, liver disease, renal failure, and immune suppression. Diabetes, impairing immune function, is the most common factor, seen in 84% of patients in our study (Table 2).

The infection is typically polymicrobial (78%), with common organisms being E. coli (56%), Streptococcus (48%), Klebsiella (32%), Pseudomonas (24%), Staphylococcus (16%), Acinetobacter (8%), and Proteus (8%) (Table 3).

Successful treatment requires effective resuscitation, broad-spectrum antibiotics, and aggressive debridement. All necrotic tissue must be removed until healthy tissue appears. Multiple debridements may be needed; in our study, the average was two.

VAC therapy improves wound care, reduces edema, enhances blood flow, and speeds healing in Fournier's gangrene. It also improves comfort, reduces pain and dressing changes, aids mobility, and shortens hospital stays. In our study, 48% of patients received VAC after debridement.

There is no consensus on colostomy use in Fournier's gangrene. Some recommend it for extensive sphincter involvement, colonic or rectal perforation, or large perineal wounds. In our study, 4% of patients underwent Colostomy due to sphincter involvement.

Fournier's gangrene prognosis depends on early diagnosis and treatment. Poor outcomes are linked to delayed diagnosis, anorectal disease, advanced age, female gender, diabetes, malignancy, organ failure, and a high Fournier's gangrene index. Despite a 16–50% mortality rate, our study reported no deaths due to early debridement and broad-spectrum antibiotics.

Table 1- Source of Infection

Source of Infection	Number of patients	Percentage of patients
Perianal Abscess	15	60%
Trauma	4	16%
Idiopathic	6	24%

Table 2- Comorbid Conditions

Comorbid Conditions	Number of patients	Percentage of patients
Diabetes Mellitus	21	84%
Chronic Alcoholism	20	80%
HCV infection	8	32%
Nil	2	8%

Table 3- Composition of the Isolated Organisms

Isolated Microbe	Number of patients	Percentage of patients
Escherichia Coli	14	56%
Streptococcus	12	48%
Klebsiella	8	32%
Pseudomonas	6	24%
Staphylococcus	4	16%
Acinetobacter	2	8%
Proteus	2	8%

Since most of the cases are Polymicrobial (78%) , the percentage of cases for each microbes when added together will be more than 100%.

Fig a, b:- 62year old diabetic male with Fournier's Gangrene – before and after debridement.
Fig c, d:- 55year old non diabetic, HCV positive male with Fournier's Gangrene – before and after debridement.
Fig e, f:- 42year old diabetic female with Fournier's Gangrene before and after debridement.

Limitations

Due to Retrospective study, there is limited access to some patient data, preventing the calculation of the Fournier's gangrene index. Additionally, etiological and predisposing factors were unclear in some cases, representing study limitations.

CONCLUSION

In conclusion, Fournier's gangrene is a fast-progressing emergency with high risks if not treated promptly. Effective resuscitation, aggressive debridement, and VAC therapy in appropriate cases improve outcomes, enhance wound care, and reduce complications and ostomy requirements.

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