Research Paper

A Study of Cases of Fournier's Gangrene in Pacific Medical College, Udaipur

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ABSTRACT

Background: Pacific Medical College & Hospital (PMCH) is a 900 bedded, multispecialty, tertiary level health care centre with state of the art equipment, infrastructure & a team of highly experienced, qualified, skilled & motivated teachers, doctors and technical manpower. The hospital has well established departments both in diagnostic & therapeutic fields as well as in supporting logistics services.

Keywords: Fournier's Gangrene, Necrotising Fasciitis, Debridement

INTRODUCTION

Fournier's Gangrene (FG) is also called as idiopathic gangrene of the scrotum is a fulminant fasciitis synergistic necrotizing fasciitis of the genital, and perianal region that leads to obliterative arteritis of the arterioles of the scrotal skin thrombosis of the small subcutaneous vessels and results in the development of gangrene of the overlying scrotal skin[1].FG is an acute surgical/urological emergency[1] with a mortality rate varying from 15–50%. It is common in diabetics, old age, poor general hygiene, malnutrition and immune compromised individuals. Although FG was first described by Baurienne over 100 years previously, in 1764[2] Jean Alfred Fournier gave the condition its eponymous name in 1883. Since then, the epidemiology and clinical features of the disease have changed significantly. Our understanding of the pathogenesis also has improved greatly and a modern multidisciplinary approach to treatment has been adopted. FG has a high death rate, ranging from and. The central principles mainstay of management are aggressive debridement, broad spectrum antibiotics, and intensive supportive care and meticulous post-operative wound care has improved the prospects of patient survival. In this research paper, we have made an effort to study analyze our experiences and cases of FG in PMCH to define and analyse the etiological factors, surgical and multi-modality treatment, and our efforts towards meticulous daily dressing, wound improvement, healing, outcome and patients' survival.

Fig.1. A Case of Fournier's Gangrene

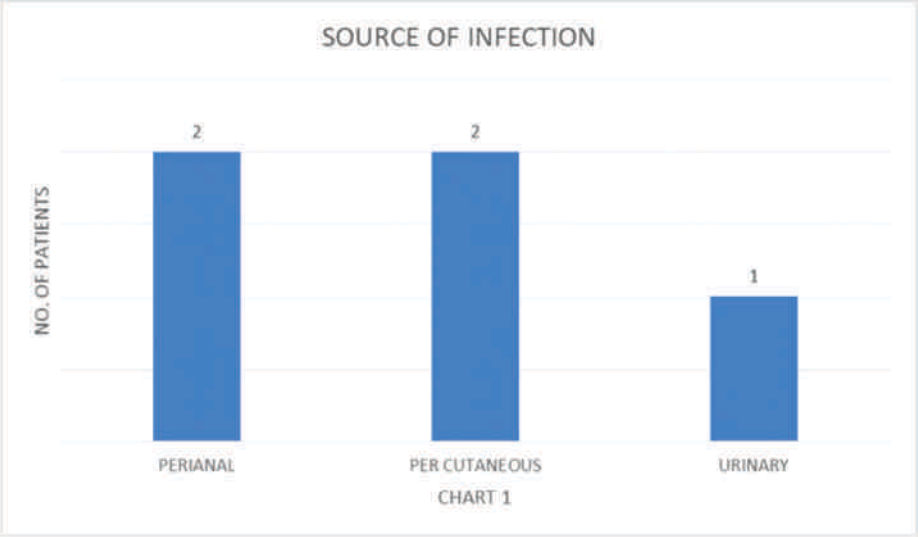
METHODS

In our retrospective study, the medical records of three patients were consecutively admitted to our institution during a four year period, between January 1014 to December 2019, were retrospectively

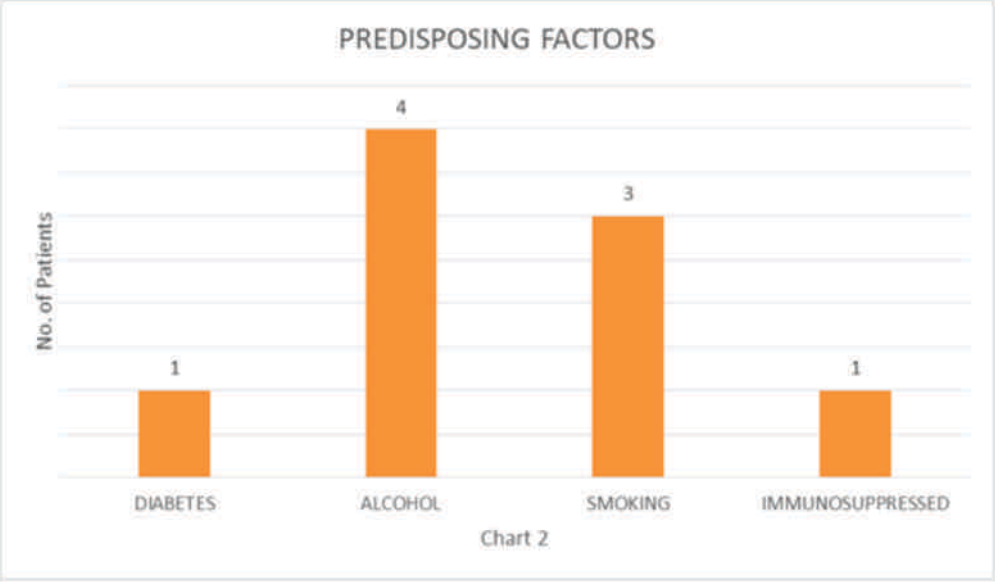
reviewed analysed. The cases were diagnosed and included in the study on clinical grounds by taking elaborate history and thorough local examination. Cases with scrotal and perianal abscess were excluded. Patients with a simple scrotal or perirectal abscess without necrotizing infection were not included in this series. The patient's age, etiology, predisposing factors, microbiological findings, duration of hospital stay, treatment, and outcome were analysed. The patients were treated managed with triple antimicrobial therapy (broad-spectrum antibiotics, aminoglycoside, and metronidazole), thorough debridement, meticulous cleaning, and then they underwent split-thickness skin grafts or delayed closure as needed. They had no immunological problems. The patients were admitted to surgical ward, broad spectrum triple antibiotics were given, pre-operative investigations done and emergency meticulous debridement, and exhaustive cleaning under anaesthesia was performed and sample collected for culture and sensitivity. Post operatively, their wounds were inspected, cleaned with normal saline and then dressed with topical antibiotic ointment daily.

RESULTS

The mean age of the patients was 53 years (range = 40–69) years. The mean duration of hospital stay was 12 Days (range = 08–16) days. The patients had a mean length of hospitalization of 10 days (range = 06-15) days. The source of the gangrene was per cutaneous in 2 patients, urinary in 1 patient and perirectal in 2 patients (Chart 1).



The predisposing factors (Chart 2) included diabetes mellitus in 1 patient (20%), alcoholism in 4 patients (80%). Smoking in 3 patients and 1 patient is immunosuppressed. In our study, all patients were from a lower socioeconomic strata with poor hygiene.



Of the lesions, 50% (n = 3) the gangrene involved the scrotum only, in 25% (n = 1) gangrene was located on the penis and scrotum and in remaining 25% (n = 1) involved the scrotum and perineum. The presenting symptoms included scrotal oedema in 5 patients (100%), scrotal pain in 4 patients (80%), crepitus in 3 patients (60%), feculent odour in 3 patients (60%), and fever > 38°C in 3 patients (60%). 1 patient had leucocytosis on presentation. The total number of surgical debridement was five. Pus samples obtained for culture and sensitivity revealed Escherichia coli in 2 patients (40%), Pseudomonas spp. in 2 patient (40%). Mixed flora (aerobic and anaerobic microorganisms or no growth in 1 patients (20%) (Chart 3).

Chart 3. Microbiological Findings

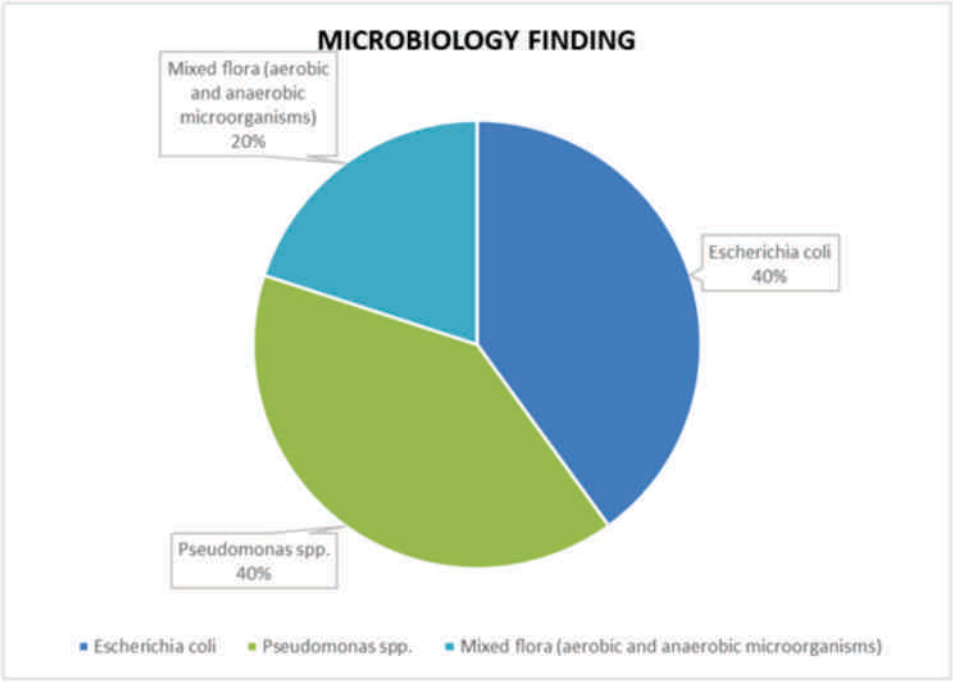


Fig.2. Appearance of the Wound after the Debridement

The progress and outcome was better in all our patients. All of the patients had a localized disease (localized to the genital or scrotal region and $\approx\leqslant$ 8 cm in size). In 2 patients, scrotum and penis healed well with post-operative measures like meticulous wound care without any additional therapy. In contrast, in the third case, the scrotal skin was closed by secondary suturing and/or skin grafting.

Fig.3. Appearance After Secondary Suturing Or Skin Grafting

DISCUSSION

FG was first described by Baurienne over 100 years ago, but in 1764[2] Jean Alfred Fournier gave the condition its eponymous name. It is a rare condition with considerable morbidity and mortality if not treated aggressively. The peak age of incidence is 40– 50 years[3]. The mean age of our patients was 52 years. Diabetics, alcoholism, poor personal hygiene and immunocompromised individuals are more predisposed to FG.

The patients usually presents with pain in the scrotal area, scrotal swelling, odour and fever[4].In our patients, 5 patients (100%), presented with scrotal oedema, 4 patients (80%) with scrotal pain, crepitus was found in 3 patients (60%), feculent odour in 3 patients (60%), and fever > 38°C in 3 patients (60%). 1 patient had leucocytosis on presentation.

The exact aetiology of FG is not known. Initially, due to trivial trauma, cutaneous, urogenital and anorectal spread, otherwise less virulent organisms sets in obliterative endarteritis of arterioles of scrotal skin and subcutaneous tissues resulting in vascular thrombosis and tissue necrosis. The FG is a polymicrobial infection by both aerobes and anaerobes particularly organisms of normal ano-rectal, urogenital and skin flora particularly E coli, Bacteroides, Pseudomonas spp. Streptococcus, Staphylococcus and Clostridia. Both aerobic and anaerobic organisms set in cascade of infection with the help of various proteins, enzymes resulting in thrombosis and gangrene. Local crepitus observed in some cases is due to formation of hydrogen and nitrogen by anaerobic organisms[5].

The main hallmarks of management of FG are timely surgical intervention in the form of liberal debridement, triple antimicrobial therapy, aggressive haemodynamic stabilisation and meticulous post-operative care. During debridement even doubtfully viable tissues should be sacrificed. Testes and spermatic cords are not involved as they have an independent blood supply, hence not excised. Indwelling urethral catheterization and even (rarely) suprapubiccystostomy may be needed to prevent spillage of urine on the operated area. The importance of daily wound care in the form of meticulous dressings goes in the long way in early recovery and patient's survival.

CONCLUSION

FG is an acute surgical emergency[1] with a high mortality rate. Timely surgical intervention in the form of liberal debridement, triple antimicrobial therapy, aggressive haemodynamic stabilisation and meticulous post-operative care can improve the outcome and patient survival.

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