INTRODUCTION

Named after venereologist, Jean Alfred Fournier, Fournier’s gangrene is uncommon, rapidly progressive infection of the genital, perineal and perianal regions with occasional cranial extension to the abdominal wall. Many terms, such as idiopathic gangrene of the scrotum, periurethral phlegmon, synergistic necrotizing cellulitis, phagedena, have been used to describe it. Commonly affects males but also is seen in women and children. Genitourinary tract (20-40%), gastrointestinal tract (30-50%), and/or skin (20%) form the nidus for aerobic and anaerobic bacteriae. It is characterized by a synergistic, necrotizing fasciitis leading to the thrombotic occlusion of small subcutaneous vessels and development of gangrene. There are two types: Type I is due to a mixture of aerobic and anaerobic organisms usually following an abdominal operation or associated with diabetes mellitus. Type II is due to Group A Streptococcus synergistic with a second organism (Staphylococcus aureus, Coliforms, Bacteroides spp.). Diabetes mellitus (20-70%), alcoholism (25-50%), malignant disease, obesity, peripheral vascular disease, local trauma, urethral stricture, and perianal disease have been cited as predisposing factors. The clinical feature has vast heterogeneity from the insidious onset and slow progression to rapid onset and fulminant course. Early presentation and diagnosis, supportive measures, and the use of broad-spectrum antibiotics with prompt and aggressive surgical debridement remain the cornerstone of management. If not treated aggressively, the patient may rapidly progress to sepsis and subsequent organ failure leading to death. In spite of belligerent management mortality is still high, accounting 20-30%.

CASE REPORT

A 51-year-old male presented to the emergency department with a complaint of scrotal pain and swelling. His symptoms had started 5 days prior to the presentation but had progressed rapidly in the preceding 24 h. The patient also complained of fever, nausea, and diaphoresis. The patient was a hypertensive on treatment since 11 years and was also on treatment for diabetes mellitus from 5 years. On examination, the patient had erythema with diffuse edema of the scrotum and penis with areas of skin discoloration. Significant inguinal lymphadenopathy was noted. Laboratory analysis revealed a blood glucose level of 447 mg/dL, serum creatinine of 3.3 mg/dL, lactic acid of 3.8 mmol/L, and white blood cell count of 27.8 K/µL. A bedside ultrasound of the scrotum showed evidently normal testes with hypoechoic scrotum (Figure 1). Based on history and clinical examination, a diagnosis of Fournier’s
gangrene was made. The patient was taken to the operating room for liberal debridement of the scrotal and penile region (Figure 2). Wound culture and histopathology of the specimen revealed acute inflammation and liquefactive necrosis associated with mixed bacterial flora, consistent with the diagnosis of Fournier’s gangrene. Broad-spectrum antibiotics with aerobic and anaerobic coverage were concomitantly started. The patient underwent debridement once more in a span of 3 more days prior to resurfacing with split thickness graft 10 days later (Figure 3). He was discharged approximately 25 days of hospitalization in satisfactory condition.

**DISCUSSION**

Fournier’s gangrene is a condition marked by fulminant polymicrobial necrotizing fasciitis of the urogenital and perineal areas. Infection commonly starts as cellulitis presenting with local dramatic clinical features. The systemic signs are out of proportion to the local extent of the disease. Spread of infection is in facial planes. In due course, extensive necrosis occurs. The testes are usually spared as they procure blood supply intra-abdominally. To quantify the severity of the disease, Laor et al. developed a scoring system, using clinical signs and laboratory data.

Ultrasoundography can differentiate intrascrotal abnormality from cellulitis. Ultrasound has demonstrated a sensitivity of 88.2% and a specificity of 93.3% for diagnosing clinically suspected necrotizing fasciitis and 100% sensitivity in the detection of soft tissue air in cadaveric studies. With gas-forming organisms, there may be a loss of tissue planes from subcutaneous air. Computed tomography and magnetic resonance imaging are useful in diagnosing retroperitoneal and intra-abdominal disease process.

Fournier’s gangrene necessitates aggressive multimodal approach, including, hemodynamic stabilization, early administration of broad-spectrum antibiotics, and emergency operative treatment. Multiple surgical debridement is a rule than an exception. Orchidectomy may be necessary in quite a few even though testes are classically spared. Split thickness skin graft to cover perineal and scrotal defects is the treatment of choice. Meshed slits of the graft have to be oriented transversely. Vacuum-assisted closure or negative pressure dressing has a dramatic effect in the treatment of Fournier’s gangrene. Hyperbaric oxygen therapy, though with no conclusive evidence, is widely believed to be an effective adjuvant therapy.

However, despite advancements in diagnostic modalities and intensive care management, mortality can still approach 67%. Prompt diagnosis with early surgical debridement, antibiotic administration, and good supportive care, along with primary disease management of the co-morbidities, such as in diabetic and immunosuppressed patients, is of utmost importance to reduce morbidity and mortality in Fournier’s gangrene.
REFERENCES


How to cite this article: Tejas AP, Naveen N, Mahesh MS, Dhanraj P. Fournier’s Gangrene: A Case Report. IJSS Case Reports & Reviews 2015;2(7):20-22.

Source of Support: Nil. Conflict of Interest: None declared.