

Fournier's gangrene in females: A rare entity

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ABSTRACT

Fournier's gangrene is a form of necrotizing fasciitis with abrupt onset of rapidly fulminating genital gangrene of idiopathic origin and gangrene up to deep fascia. It occurs usually in patients with urogenital infections and comorbidities such as diabetes, immunosuppression, or even trauma. Here, we present one such case of an 86-year-old female presenting with a history of pain and purulent discharge from the perianal region for 5 days. On examination, a wound of 20 × 15 cm perineal region extending up to the gluteal region posteriorly and labia majora anteriorly. The patient was planned for debridement under spinal anesthesia on an emergency basis followed by regular dressing and antibiotic therapy. The peri-operative period was uneventful. Along with surgical management, the patient was managed medically by control of sugars, treating sepsis with appropriate antibiotics. The patient recovered from sepsis, and the wound showed granulation tissue after 1 week of serial debridement. The wound was closed with a skin graft at a later date. Fournier's gangrene should be kept as a differential diagnosis in females with perineal abscesses or necrotizing fasciitis in females.

Keywords: Fournier's Gangrene, Necrotizing infection, Sepsis, Urogenital infection

Fournier's gangrene is defined as polymicrobial necrotizing fasciitis of the perineal, perianal, or genital areas. The entity was named after the French venereologist Jean Alfred Fournier in 1883 and usually comes from an initial infectious focus in the genitourinary tract, anorectal region, or the soft tissues of the genital region and in some instances can be posttraumatic as well [1-4]. Its incidence among males is estimated to be around 1.6/100,000. Although the report among females is scanty, one study showed a male: female ratio of 10:1 [5]. Therefore, this condition commonly passes under the radar of clinical suspicion in cases of females and the diagnosis is missed out. Due to fewer reported cases, it is poorly characterized among females and the surgeons must be made aware of its possibility in the female population.

Hence, we report the case of Fournier's gangrene in an elderly female who is treated on an emergency basis with aggressive debridement and antibiotic therapy.

CASE REPORT

An 86-year-old female presented with a history of pain associated with purulent discharge from the perianal region for 5 days. On further eliciting the history of the patient, the history of blebs in the genital region was found. These blebs ruptured spontaneously


before purulent discharge. The patient gave no history of fever, burning micturition, fecal incontinence, or pain abdomen. She has no history of similar complaints in the past. She was a known case of Type 2 diabetes mellitus and hypertension for 10 years. The patient was under oral hypoglycemics and anti-hypertensive medication. The patient achieved her menarche at the age group of 14 years and menopause achieved 36 years ago. The female had four children and the last delivery was at the age of 43 years, after which tubectomy was done.

On examination, the patient's weight was 60 kg, height was 1.52m, and body mass index (BMI) was 25.9 kg/m². The patient was febrile to touch and pale. She was moderately built and nourished. There were no signs of icterus, cyanosis, clubbing, or lymphadenopathy. The vitals were stable with a pulse rate of 88 beats/min, blood pressure of 126/84 mm of Hg, respiratory rate of 20 cycles per min, and oxygen saturation of 96% at room air. Per abdominal examination found soft, nontender abdomen with no organomegaly and healed tubectomy scar.

Local examination revealed a wound of around 20 × 15 cm in the perineal region extending up to the gluteal region posteriorly and labia majora anteriorly. Two necrotic patches of 7 × 7 cm were over the wound and there was an ulcer of 2 × 2 cm in the gluteal region with punched-out edges and slough. Foul-smelling purulent discharge was present from the wound (Fig. 1a and b). There was no active bleed. Digital per rectal examination revealed

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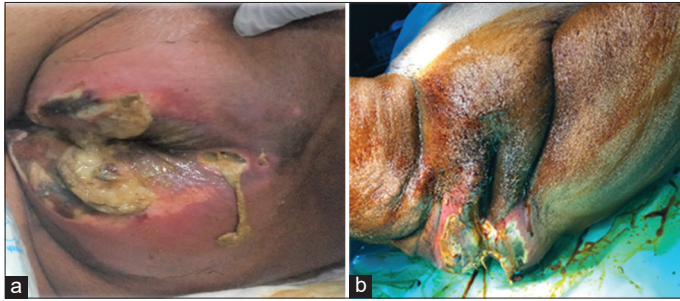


Figure 1: (a) Peri-anal wound with necrotic patch and slough; (b) Peri-anal wound extending into labia majora

normal sphincter tone, no fissures, fistula and skin tags, and per rectal bleed.

The patient's hemogram revealed anemia (Hb:7 g%) with neutrophilic leukocytosis (total leukocyte count:14,300/mm³ and neutrophils 84%) with deranged renal function tests (RFT) (urea 84 mg/dl and creatinine 2.2 mg/dl). The random blood sugar was 214 mg/dl and HbA1c was 8%. Microbiological examination of the pus sample revealed *Escherichia coli* sensitive to imipenem, amikacin, and nitrofurantoin and Staphylococci sensitive to amoxicillin-clavulanic acid, Piperacillin-tazobactam, and imipenem. The ultrasound (USG) of the abdomen did not reveal any abnormality. USG of the soft tissue of the perineal region found heterogeneous collection in the bilateral perianal region with hypoechoic foci of around 20–30 cc. A provisional diagnosis of Fournier's gangrene with acute kidney injury (AKI) secondary to sepsis was made.

The patient was planned for debridement under spinal anesthesia on an emergency basis. Extensive debridement of the necrotic tissue preserving the anal sphincter was done till the healthy tissue was visible. Intraoperatively, a purulent collection of around 40–50cc along with necrotic tissue was observed. Necrotic tissue was extending up to the ischio-rectal fossa which confirmed the diagnosis. Thorough wash was given using betadine and saline. Hemostasis was achieved, and a sterile dressing was done (Fig. 2a and b). Postsurgery, one unit of packed RBCs was transfused. The patient was started on intensive medical management for metabolic control. The patient was put on regular insulin on a sliding scale. Nephrologist opinion for AKI was sought, and the patient was advised at least 4 pints of i.v. fluid daily with adequate intake oral intake of fluids, avoiding nephrotoxic drugs, and daily monitoring of RFT and serum electrolytes. The patient was put on an i.v. antibiotic course of Piperacillin-tazobactam (renal dose) and metrogyl based on the antibiotic sensitivity. The patient's dressing was changed over 24 h followed by serial debridement every 48 h.

After a week of intensive management, granulation tissue started to appear on the wound site (Fig. 3). Following 2 weeks of wound management, the wound was closed using a skin graft. The perioperative period was uneventful. The graft uptake was adequate. The patient was discharged on postoperative day 7 of grafting. The patient was advised glycemic control and was prescribed Vitamin C and B complex supplements on discharge.

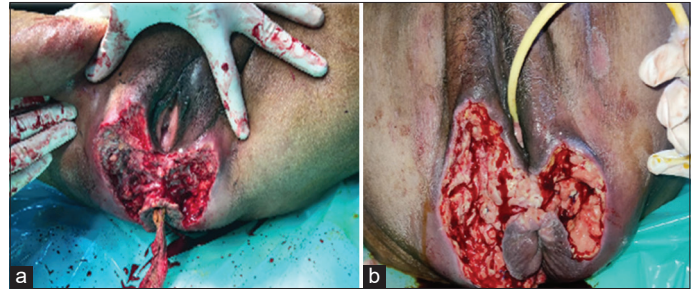


Figure 2: (a) Intraoperatively, wound seen extending to the ischio-rectal fossa; (b) Postoperatively, thorough wash was given with 5% povidone iodine solution



Figure 3: Wound showing granulation tissue

DISCUSSION

Fournier's gangrene is a rare entity among females. Many of these patients present with sepsis if the condition is not treated aggressively. The mortality rate is usually around 20%–30% both in males and females [6]. However, this disease can progress rapidly in an aggressive manner and evolve rapidly with a mortality rate of up to 70% along with several complications such as sepsis, respiratory, renal, or multiorgan failure [7].

Cabello *et al.* describe the case of a 51-year-old female who presented with complaints of fever, malaise, increased volume, and pain of the crural area and external genitalia, erythema, necrotic area, and crepitus, as well as a bloody and very foul-smelling ulcer secreting pus for 10 days. Further metabolic control was applied with antimicrobial therapy, surgery, dressing, and a vacuum-assisted closure system, which lead to resolving Fournier's gangrene and controlling the comorbidities [8]. Aslanidis *et al.* described a case of Fournier's gangrene in a young female who also suffered from concomitant Lemierre's syndrome (thrombophlebitis of the internal jugular vein and bacteremia caused by primarily anaerobic organisms) and had undergone perineal abscess drainage a week before. The patient was managed in a similar way with rigorous debridement, higher antibiotics, and anticoagulants for Lemierre's syndrome [6].

In most of the cases, uncontrolled sugars along with obesity are the main culprit which favors infection. Beecroft *et al.* in their study concluded that female patients with Fournier's gangrene have greater

BMI but similar clinical presentation, microbiologic characteristics, and mortality rate compared to men (6% vs. 7%, $p>0.05$) [9]. The etiology is usually polymicrobial with microorganisms in the genitourinary and anorectal tract and on the skin of the genital area. Some of the Gram-negative aerobic bacteria involved in this condition are *E. coli*, *Pseudomonas aeruginosa*, *Proteus mirabilis*, *Klebsiella pneumoniae*, and *Providencia stuartii*, whereas aerobic Gram-positive cocci involved include *Enterococci*, *Staphylococcus aureus*, and *Staphylococcus epidermidis*. *Bacteroides fragilis*, *Bacteroides melaninogenicus*, and *Clostridium* are the examples of the anaerobic bacteria resulting in this gangrene, and in much lower proportion, some opportunistic fungi such as *Rhizopus arrhizus* and *Mucor* are involved [10]. It may also develop secondary to an abscess of Bartholin's gland or vulva. In a few cases, it has occurred as a complication of episiotomy, vaginal hysterectomy, or septic abortion in the younger age group.

USG/computed tomography scans might help to know the extent of the gangrene and culture sensitivity of the purulent material helps in guiding antibiotic therapy. Otherwise, Fournier's gangrene is mostly a clinical diagnosis. Fournier's gangrene is considered to still be a very aggressive disease, with unacceptably high morbidity, despite the information available on the disease process. Although rare among females, the management is along the same lines as in cases of males, i.e. thorough debridement of the necrotic tissue with specific antibiotic therapy with concurrent treatment of patients comorbidity.

CONCLUSION

Fournier's gangrene should be kept as a differential diagnosis in females with perineal abscesses or necrotizing fasciitis in females. The apparent lower reported incidence of Fournier's gangrene in women is by no means a reason to underestimate this condition. The key to provide a better prognosis is to achieve a timely diagnosis with early surgical intervention, specific antimicrobial

management along with dressings, and general care and treatment of the patient's comorbidity.

Consent

As per the International standards of the university, written patient consent has been collected and preserved by the authors.

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