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Role of permanent sigmoidostomy in Fournier's gangrene –A case report

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Abstract

Fournier's gangrene is a rare, necrotizing fasciitis of the genitals and perineum caused by mixture of aerobic and anaerobic microorganism. The complications of this synergistic infection are multiple organ failure and death. Here we present a patient, is a known diabetes mellitus who reported to casualty with gangrenous and necrotic patches involving scrotum and perineal areas and with grossly impaired renal and blood parameters under sepsis. Due to aggressive nature of this condition timely intervention is required with involved extensive soft tissue debridement, broad spectrum antibiotics, permanent sigmoidostomy due to anal sphincter damage and split skin cover to the perineum. Appropriate and early therapy reduces morbidity and mortality as shown by this case management.

Keywords: Sigmoidostomy, Fournier's gangrene, aerobic, anaerobic

1. Introduction

Fournier's gangrene (FG) is an acute, rapidly progressive, and potentially fatal, infective necrotizing fasciitis affecting the external genitalia, perineal or perianal regions, which commonly affect men, but can also occur in women and children [1]. In 1764, Baurienne originally described an idiopathic, rapidly progressive soft-tissue necrotizing process that led to gangrene of the male genitalia. However, Jean-Alfred Fournier, a Parisian venereologist, is more commonly associated with this disease, which bears his name. In one of Fournier's clinical lectures in 1883, he presented a case of perineal gangrene in an otherwise healthy young man. Since Fournier's description, subsequent experience has shown that, in most cases, Fournier gangrene has an identifiable cause and that it frequently manifests more indolently. Over the years several terms have been applied to Fournier's gangrene including "streptococcus gangrene," "necrotising fasciitis," "periurethral phlegmon," "phagedena," and "synergistic necrotising cellulitis". Early surgical debridement (as shown in Figure 1) of necrotic tissues and antibiotics are fundamental in the treatment of FG. Despite advanced management mortality is still high and averages 20–30% [2]. In a review of 1726 cases from 1950 to 1999 worldwide, reported in the English literature, the mortality rate was 16 per cent. In a subsequent unpublished study of 3297 cases of FG from 1950 to 2007, the mortality rate increases to 21.1%. This is in spite of advances in technology and medical practice. It was paradoxically observed in both studies that mortality was higher in the advanced countries of America, Canada, and Europe than in the underdeveloped countries [3]

At present, FG is recognized as a subclassification of necrotizing fasciitis. Hence, FG is described as necrotizing soft tissue infections originating from or limited to the genitalia or perineum irrespective of sex. We report a case of FG, presenting the outcome.

2. Case Report

A 38yr old gentleman was admitted in surgery department. He presented with swelling and pain in the perianal region for 1 month with a known Diabetes mellitus. Initial vital signs indicated that the patient was hypotensive, tachycardic and dehydrated with diabetic ketoacidosis and sepsis. Perianal examination revealed cellulitis and gangrenous patches extending to the scrotum. On digital rectal examination, tenderness and discharge of pus was present. A provisional diagnosis of FG was made. The patient was resuscitated, investigated, & started on triple antibiotics therapy and prepared for emergency surgical debridement. Blood haemogram revealed haemoglobin (Hb %)—10 gm%, white cell count—24,500/cmm

with polymorph nuclear leucocytosis (N-85%). Biochemical parameters were (blood urea: 70 mg%, serum creatinine: 2.4 mg%, random blood sugar: 330 mg%, and LFT: within normal range, urine ketone bodies positive). He was taken up for emergency surgical debridement during which examination revealed extensive necrotic points in the anal region covering a large area to the inner aspect of thighs. He was taken up for re-debridement after 2 days (fig 2). In the course of surgical management the patient received 2 units of packed cell due to intermittent acute bleeding after each surgical debridement. After stabilisation, on 4th day of admission a left side sigmoidostomy performed to avoid contamination and to promote faster healing in the perineum region. After control of DM and with negative pus c/s skin dermal grafting done for full coverage of involved areas at 20th day (fig 3). Then anal manometry done at 34th day which showed poor basal and squeeze pressures which are not sustained (around 50%), so revision of sigmoidostomy plan was ceased and discharged with permanent sigmoidostomy.



Fig 1: Fournier's Gangrene Preoperatively



Fig 2: Post Debridement



Fig 3: Post Split Skin Grafting



Fig 4: At Discharge

3. Discussion

Colostomy has been used for fecal diversion in cases of severe perineal involvement. Indications for colostomy include anal sphincter involvement, fecal incontinence and continued fecal contamination of the wound's margins. Although colostomy can be beneficial with regard to wound healing by avoiding fecal contamination, it should be performed only in selected cases because it increases morbidity. The estimated percentage of patients requiring colostomy after debridement of FG is approximately 15%, and an increased mortality has been noted in patients requiring diversion. In their study of 44 patients presenting with FG, Ozturk and colleagues found that in 18 patients that required temporary stoma formation, significant increases in healthcare costs were observed without an effect on outcomes. Therefore, it is recommended that stoma formation be reserved for patients with fecal incontinence caused by extensive damage to the anal sphincter^[4].

The germs isolated in Fournier's gangrene are invariably of colonic origin. Moorthy *et al.* investigated the factors that may influence survival in this condition, and found that the performance of a colostomy may improve the course of the disease^[5]. The need for faecal diversion is expressed in the literature and depends on the severity of the disease. Korkut *et al.* reported 45 cases of Fournier's gangrene and showed that mortality among patients not requiring stoma was 7%, but 38% among patients in whom stoma was required^[6]. The rationale for rectal diversion includes a decrease in the number of germs in the perianal region, improved wound healing and local control of infection^[7].

4. Conclusion

Fournier's gangrene is the most common condition in surgical practice with a high mortality rate, so timely intervention is needed with aggressive debridement, broad spectrum antibiotics and intensive supportive care. In the early stages of the disease before necrotic lesion occurs a final diagnosis might be difficult. In an extensive involvement of Fournier's gangrene in perineum, sigmoidostomy is essential to improve wound healing and avoid contamination of wound.

“Sigmoidostomy has played a vital role in fast and complete recovery of our patient”

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