

EARLY DIAGNOSIS AND PROMPT SURGICAL EXCISION WITH COMPLETE DIVERTING COLOSTOMY: IMPROVE THE OUTCOME IN PATIENTS WITH FOURNIER'S GANGRENE.

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Abstract

Fournier's gangrene is uncommon acute fulminating cellulitis of scrotum, perineum and groin which develops suddenly and often without any apparent causes. The aim of this study is to elucidate the effectiveness of early and extensive surgical excision with primarily performed complete diverting colostomy in outcome of patients.

Fourteen patients with Fournier's gangrene were included from January 2000 to October 2005 at Basrah General Hospital. History and examination has been taken. Treatment was in form of giving triple antibiotics. Early wide extensive excision of necrotic skin with complete diverting colostomy at the same occasion has been done in all patients.

There were all male patients, their ages ranged between 4-75 years old, the average is 50 years. Determining the possible underlying cause finding that five patients has no obvious cause, three had perianal abscesses, determining the extent of disease, finding that in ten patients sloughing of tissue involved perineum, scrotum plus groin and or penis mortality were two out of fourteen patients (14%).

Fournier's gangrene is a rapidly progressive, fulminate infection. With institution of aggressive treatment, including early surgical intervention, formation of completely diverting colostomy in first operation, haemo- dynamic support if needed, intensive care monitoring and broad spectrum antibiotic coverage, the disease has a greatly reduced mortality.

Introduction

Fournier's gangrene is uncommon acute fulminating cellulitis of Scrotum, perineum and groin which develops suddenly and often without any apparent cause^{1,2}. Infection usually mixed, hemolytic streptococci and clostridia welchii are predominating^{3,4}. Its due to vascular thrombosis of cutaneous vessels of the scrotal skin occur early, if uncontrolled, the infection spreads up wards into the abdominal wall. Early cases can be aborted by intensive chemotherapy but if gangrene develops, no time should be

lost before excising the necrotic tissue^{4,5}. Fournier's gangrene is a life threatening infection with mortality rate of 30-75 %^{6,7}.

The aim of this study is to elucidate the effectiveness of early and extensive surgical excision with primarily performed complete diverting sigmoid colostomy with mucus fistula in outcome of patients.

Patients and methods

Fourteen Patients with Fournier's gangrene were included from January 2000 to October 2005 at Basrah General

Hospital (General Surgical and urological wards).

History and examination has been taken. Age, sex, aetiology, predisposing factors, presenting features, surgical procedures, post operative course, morbidity and mortality were studied.

Microbiological Study has been obtained in all patients. Swab has been taken primarily to Gram Stain and then for culture and Sensitivity.

Treatment was inform of hospitalization with supportive care, holding of oral nutrition, giving intravenous fluid, blood transfusion if needed and a triple antibiotics , by giving gentamycin, metranidazol and Ampicillin until the bacteriological report is available. Early wide extensive excision of necrotic skin with complete diverting sigmoid colostomy and mucus fistula at the same occasion has been done in all patients. Urethral catheterization was used in all but in one patient in whom penis has been involved by disease so suprapubic cystostomy has been performed. The postoperative patients care were continue with twice daily change of dressing using soaked gauze with 10% povidone iodine solution .Some patients needed other sessions of wound excision. Daily examination of patients generally and wound specifically, haematological and biochemical investigation were continue until patient general condition improved. When patient general condition was improved, acute symptoms were resolved, colostomy was functioning, wound was clean, patient could tolerate adequate oral intake and did not develop complications fig.(1), he could discharged with serial out patient visits to asses wound healing.

Results

Fourteen patients with Fournier's gangrene were included in our study, there were all male patients their ages

ranged between 4-75 years old, and the average is 50 years.

Determining the possible underlying cause finding that 3 patients had a perianal abscess, one had many failed trial of urinary catheterization, one after two days of peritoneal dialysis, one patient was paraplegic with vesical stone underwent ESWL. Groin boil and blunt trauma to perineum and penis were another two separate causes in two patients. One patient has recurrent urinary tract infection underwent cystoscopy. The cause was undetermined in 5 patients (table I). Three patients had diabetes mellitus, two patients had medical immuno-suppression (steroid and chemotherapy) as a predisposing factors. Presenting symptoms included scrotal and perineal oedema, scrotal pain plus erythema, crepitus and fever. The most common finding on the initial physical examination were scrotal and perineal swelling and varying degree of sloughing of involved skin in scrotum and perineum and or foul smell discharge (table II). All patients had leukocytosis on presentation.

Determining the extent of disease, finding that in 10 patients sloughing of tissue (skin and subcutaneous tissue) involving: perineum, scrotum plus groin and or penis , in 2 patients sloughing reached to perineum and scrotum, and in two patients the scrotum is only involved (table III).

An early wide extensive excision of necrotic skin with complete diverting colostomy at the same occasion has been done in all patients.

Ten patients needed other sessions of wound excision which range from 2-4 with mean of 2 sessions. The mean (range) duration of surgery for initial procedure was 45 (40-95) minutes. Regarding the microbiological studies, infection were polymicrobial with a mean of 3 bacteria isolated in all patients, the most isolated species were

Escherichia coli, strepto cocci and staphylococci.

The hospital stay of patients in ward was 8–23 days (mean time of stay is 12 days). Eight patients needed transforming from ward to intensive care unit for few days because of extreme age or chronic medical illnesses or in severely extended disease. Mortality was two patients out of fourteen 14%. Follow-up has been for patients weekly for two months and then monthly for 6 months.

Discussion

Fournier's gangrene is an infective necrotizing fascitis of perineal, genital or perianal regions, the infective process leads to thrombosis of subcutaneous blood vessels, resulting in gangrene of the overlying skin⁸. Although Fournier originally described the abrupt onset of rapidly fulminating idiopathic genital gangrene in previously healthy young men, 4 the disease is no longer restricted to young men but may affect a wide age range from neonates to the very elderly^{4,9}. In our series we reported Fournier's gangrene in a 4 years old child and in 75 years old man. Redman and colleagues reported that fifty – five cases have been reported in the pediatric literature¹⁰, in similar report Adams et al found that two third of whom were younger than 3 months¹¹. Despite this the main age of patients appears to have increased from 40 years in cases reported before 1995 to 50 years in more recent series^{3-5,9}. Although in our series and in most series all patients with Fournier's gangrene were men, there are also several reports of genital gangrene occurring in women¹². The disease commonly begins locally with discomfort, itching and swelling of the scrotum and perineum. At presentation, oedema and crepitus may be noted, with systemic symptoms of fever, leukocytosis, anaemia and in some patients electrolyte abnormalities^{4,9}. In

our series some patients presented without the classic components of the disease, and therefore a high index of suspicion must be maintained, the precise aetiology of Fournier's gangrene remain unclear in 5 out of 14 patients in our series perianal abscess, urinary tract infection, trauma to perineum and urethral stricture have all been implicated as initiating factors.

Although in most series the victims of the disease almost always recognized to have underlying systemic disorder, the most common association are chronic alcoholism, which present in 25–50% of cases and diabetes which affect 40–60% of patients^{13,14}, since the emergence of HIV infection a new group of patients at risk has been recognized in both Africa and the developed world^{15,16}. Before entering the operating room all patients in this series recieved aggressive fluid resuscitation, broad-spectrum antimicrobial therapy, and haemodynamic support if needed, radical and aggressive debridment was performed with concomitant complete fecal diversion was performed as the initial management of disease. As there is high risk of ongoing progression of the infection most of those patients underwent at least one additional operation carried out one or tow days after the first, when the dressing was changed and further tissue was debried if needed. Although we were performed colostomy in the first operation for all patient in our series and we think that it improved survival of Fournier's gangrene patients and improved the condition of individual with decreased mortality rate. We completely agree with Moorthy et al¹⁷, who reported factors influencing survival of Fournier's gangrene and showed the early formation of colostomy is one of them. The arguments for diversion include decrease infection rates and improved wound healing, this is inturn decrease the difficulties in nursing care

particularly in ICU setting. It was for these reasons that fecal diversion was felt necessary in those cases.

Mortality rate in our series was two out of fourteen patients 14%, both of them were old age, delayed presentation, had extensive disease and had medical co morbidity. Our mortality rate was much less than that reported in old literature which described Fournier's gangrene as portended a dismal prognosis, with mortality rates as high as 67%.^{2,5-7,9} We attribute the dramatically improved survival to an extremely aggressive approach including early intervention, brief operation, formation of

completely diverting colostomy in first operation, radical and repeated tissue excision. These factors combined with modern antibiotic regimens and improved anesthetic technique have rendered this disease widely treatable and curable. In conclusion Fournier's gangrene is a rapidly progressive fulminate infection with the institution of aggressive treatment including early surgical intervention, formation of completely diverting colostomy in first operation, haemodynamic support if needed, intensive care monitoring and broad spectrum antibiotic coverage, the disease has a greatly reduced mortality.

Table I: Predisposing factors to Fournier's gangrene.

Predisposing factors.	No. of patients
Perianal abscess.	3
Many trial of catheterization.	1
Post peritoneal dialysis.	1
Post ESWL for vesical stone.	1
Groin boil.	1
Blunt trauma to perineum and penis.	1
Chronic UTI underwent cystoscopy.	1
Undetermined cause.	5
Total.	14

Table II: Main presenting symptoms and signs.

Symptom or sign.	No. of patients.
Perineum and scrotal swelling.	12
Scrotal pain	5
Crepitus	3
Fever	10
Pallor	6
Foul smell discharge.	4

Table III: Extent of Fournier's gangrene

Extent site	No. of patients.
Scrotum	2
Perineum and scrotum.	2
Perineum, scrotum and (groin, penis and or lower abdomen).	10

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Fig.1: A 44 years old man with Fournier's gangrene of perineum, scrotum, and right inguinal region underwent excision two times. This picture was taken in the 7th postoperative day.