SAS Journal of Surgery ISSN 2454-5104
SAS J. Surg., Volume-2; Issue-5 (Sep-Oct, 2016); p-225-227
Available online at http://sassociety.com/sasjs/

Original Research Article

Fournier's Gangrene – Our Experience

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Abstract: To study and share our experience in management of fournier's gangrene.A retrospective analysis was carried out from May 2002 to April 2014 in a single surgical unit of Department of Surgery of St John's medical college, Bangalore, India. 41 patients were studied during this period. 56% of the patients with fournier's gangrene had diabetes mellitus. Scrotum alone was affected in 9 patients (22%). Eighteen patients (44%) had debridement once. All those patients who underwent debridement only once had the disease limited to scrotum. E.coli being the commonest organism. Mortality rate in this study was 4.9%. Fournier's gangrene is a life threatening condition that commonly presents to general surgeons as an emergency. Early diagnosis is essential and aggressive debridement is the keystone in the management of fournier's gangrene.
Keywords: Fournier's gangrene, Scrotum, Diabetes

INTRODUCTION

Fournier's gangrene, also known earlier as Idiopathic scrotal gangrene, is a fulminant necrotizing infection involving perineal, perirectal or genital region [1-3]. It was first described in 1883 by a French dermatologist and venerologist Jean Alfred Fournier's [1832-1914] as an idiopathic rapidly progressive necrotizing gangrene in the region of male genitalia [2, 4]. Nevertheless, the disease is now no longer considered to be an idiopathic and various causes have been identified [5].

The majority of the cases occur between 20 and 50 years of age. The Fournier's gangrene is 10 times more common in men than in women [6, 7].

Currently, Fournier's gangrene is considered as a sub classification of necrotizing fasciitis [8].

The majority of patients with Fournier's gangrene have some predisposing factors like diabetes mellitus, alcoholism, malignancy and immunosuppression conditions [1, 2, 9].

The aim of this study was to show our experience of Fournier's gangrene.

MATERIALS AND METHOD

A retrospective study was conducted in surgical unit 3 in department of surgery of St John's medical college, Bangalore, India. The records of all patients treated for Fournier's gangrene from May 2002 to April 2014 were studied by us.

RESULT

Out of the 41 patients included in this study, 40 (97.5%) were males and only one was female. Age range was 22-75 years with a mean age of 47.22 years

Diabetes mellitus was the most common co morbidity being present in 23 patients (56%), followed by alcoholism (14.6%). One patient (2.44%) had cancer while one patient (2.44%) was HIV positive. 2 patients (4.87%) had chronic renal failure.

Etiological origin was found to be genitourinary in 15 cases (36.6%), anorectal in 13 cases (31.7%), cutaneous in 9 cases (22%) and unknown in 4 cases (9.7%).

Scrotum alone (Figure1) was affected in 9 patients (22%). 13 patients (31.7%) had abdominal wall involvement, 13 patients (31.7%) had perineum involvement and 1 patient (2.44%) had thigh involvement. 5 patients (12.2%) had extensive involvement of abdomen, thigh and perineum along with scrotum [Table 1].

All primary debridements were done within 24 hours of admission and the first dressing was done within 18 hours of debridement. Eighteen patients (44%) had debridement once, fourteen patients (34.1%)

had debridement twice, nine patients (22%) had undergone three and above debridement. Out of them, one patient had undergone a maximum of eight debridement [Table 2].

All those patients who underwent debridement only once had the disease limited to scrotum. Patients who had 3 and more debridement (22%) had the disease extent beyond the scrotum.

A diversion colostomy was performed in 13 patients (31.7%). 10 of these patients underwent the diversion at first debridement, two patients during second debridement and one patient had undergone diversion colostomy at third debridement.

Wound swab culture were positive in 29 patients (70.7%) and 12 patients (29.3%) had no growth. 22 patients (75.9%) out of 29 had polymicrobial organisms with E.coli being the commonest organism. 7 patients (24.1%) had monomicrobial growth with Klebseilla being the commonest single isolate.

Hospital stay ranged from 6-60 days with a mean stay of 17-53 days. Five patients (12.2%) had Intensive care unit[ICU] stay due to severe sepsis. 3 out of these 5 patient had undergone more than 3 debridement.

20 patients (48.7%) wound healed by secondary intention, 10 patients (24.4%) required suturing, 5 patients (12%) required split skin grafting [SSG] and 1 patient (2.4%) required flap. 3 were lost for follow up.

Of all, 2 (4.9%) patients had died. Both these patient had diabetes, were above 45 years, and were in severe sepsis at admission. They died within 4 days of admission and had not undergone any diversion procedure.

Table-1: showing the extent of involvement of Fournier's gangrene

Sl no	Extent of Involvement	Number	Percentage
1]	Scrotum alone	09	22%
2]	Scrotum+ Abdominal wall	13	31.7%
3]	Scrotum+ Perineum	13	31.7%
4]	Scrotum+ Thigh	01	2.44%
5]	Scrotum+Abdomen+thigh +Perineum	05	12.2%
	Total	41	100%

Table-2: showing the number of debridements done

Sl no	Number of Debridements	Number	Percentage
1]	Once	18	44%
2]	Twice	14	34.15%
3]	3-5 times	07	17.07%
4]	More than 5 times	02	4.87%
	Total	41	100%

Fig-1: Showing Fournier's gangrene of the scrotum.

DISCUSSION

Fournier's gangrene remains an uncommon but potentially a lethal condition with high morbidity and mortality [8, 10]. It is an aggressive and rapidly spreading infection of soft tissue of genital or perineal region [4]. The rate of fascial necrosis is reported to be in 2 to 3 cm/hour [6,11].

Fournier's gangrene is no more idiopathic in nature and specific etiology is found in approximately 95% of the cases [6]. In our study, genitourinary was the commonest etiological origin whereas in Khan's series, cutaneous origin was the commonest etiology [3].

Diabetes mellitus is considered to be the most common co morbid condition ranging from 10 -70% of the cases [3,6, 11-14]. Fournier's gangrene is a polymicrobial infection. Both aerobic and anaerobic bacteria's are usually present although anaerobes are less frequently isolated [4,8].

The organism isolated includes Escherichia coli, staphylococcus, streptococcus and enterobacteriaceae species. The infection is rarely caused by one organism and as many as 5 organisms may be cultured [6]. Escherichia coli is considered to be the commonest isolate in various studies [1, 13].

Early diagnosis and prompt treatment is essential for favorable outcome. Delay in diagnosis or treatment increases the mortality rate [4]. Aggressive surgical debridement of devitalized tissue along with broad spectrum intravenous antibiotics is the mainstay of the treatment of Fournier's gangrene [2,8]. Repeated debridement's may be required to be achieve adequate control of infection [8]. In our study, 56.1% of them required more than one debridement.

Most of the times, primary wound closure can be done, although sometimes reconstructive surgeries may be required.

Sometimes, diversion procedure like colostomy or cystostomy may be required. In our study, 9.7% of the patients required colostomy [4]. 31.71% of our patient required a stoma for faecal diversion. Mortality due to Fournier's gangrene ranges from 3-45% [15]. In our study, the mortality rate was 4.9%.

CONCLUSION

Fournier's gangrene is a rapidly progressive life threatening surgical emergency. Early diagnosis and aggressive debridement remains the corner stone of the management. 56% of the patients with Fournier's gangrene had diabetes mellitus. 31.71% of our patients required diversion colostomy. Our study had a low mortality of 4.9%.

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