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Is the social status a new prognostic factor in the Fournier's gangrene?

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SUMMARY: **Is the social status a new prognostic factor in the Fournier's gangrene?**

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Fournier's gangrene is a life-threatening acute necrotizing fasciitis of perianal, genitourinary and perineal areas. Local symptoms are scrotal swelling, erythema of scrotal skin and pain with generalized constitutional symptoms. The gangrene may extends to abdominal wall, intra-abdominal structures, and even in the retroperitoneal tissues. Urgent surgical debridement is crucial to warrant a good outcome since delayed intervention carries a poor prognosis. We report the case of a not diabetic patient with Fournier's disease presented with severe sepsis and successfully treated with urgent deep debridement and reconstructive surgery. We propose the social status of the patient as a prognostic factor with high impact for survival rate.

KEY WORDS: Fournier's gangrene - Prognostic factor - Social status - Perianal abscess.

Introduction

Fournier's gangrene (FG) is a life-threatening acute necrotizing fasciitis of perianal, genitourinary and perineal areas. Jean Fournier described cases of scrotal gangrene in France in 1843 and 1844.

FG is primarily an infective condition with multiple etiological factors and several predisposing factors are recognized (1, 2).

It is most frequently caused by the following agents: *Staphylococcus Aureus, Klebsiella Pneumoniae, Pseudomonas Aeruginosa, Proteus Mirabilis, Enterococcus, Bacteroides Fragilis, Streptococcus Anerobious* (3).

Predisposing etiological factors are mellitus diabetes, alcoholism, thrombosis, urethral obstruction and Human Immunodeficiency Virus.

The usual infective focus may include urethral sepsis, genital sepsis, prostatic sepsis, perirectal sepsis, balanitis, ischiorectal abscesses, perineal trauma, groin wound sepsis, surgical procedures (perineal surgery), perforated adenocarcinoma of the left colon (4).

The cutaneous infection of micro-organism causes a cellulitis that progresses to FG. Local symptoms are scrotal swelling, erythema of scrotal skin and pain with generalized constitutional symptoms. The gangrene may extends to abdominal wall, intra-abdominal structures, and even in the retroperitoneal tissues. Urgent surgical debridement is crucial to warrant a good outcome since delayed intervention carries a poor prognosis.

Hence, early diagnosis and management of Fournier's gangrene are important to avoid the serious complications of the disease. Diagnosis of equivocal FG is difficult as the clinical picture is relatively similar to cellulitis. So, a high degree of suspicion is needed for early diagnosis (5).

Fournier's gangrene is characterized by high

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mortality rates, ranging from 20 to 30% and is an acute surgical emergency. The mainstay of treatment should be open drainage and early aggressive surgical debridement of all necrotic tissue, followed by broad-spectrum antibiotics therapy (6, 7).
We report the case of a not diabetic patient with Fournier's disease presented with severe sepsis and successfully treated with urgent deep debridement and reconstructive surgery. We propose the social status of the patient as a prognostic factor with high impact for survival rate.

Case report

A 70-year old male was admitted to the nephrology ward with perianal abscess. The medical history was remarkable for chronic renal disease undergoing dialysis three times a week. The patient was not diabetic, non-smoker and no alcohol abuse.

A surgical consultation was done but the patient refused to undergo incision and debridement of perianal abscess. Then an antibiotic therapy was performed.

During recovery, the patient reported crush trauma at the perineal abscess. At the moment of the consultation, the scrotal skin was edematous, gangrenous and the FG process was spreading into the left groin and perineum (Figure 1). The patient was febrile (39C°) and complaining about a severe perineal pain. White blood cell count was 15,000 x10^3/mL.

A diagnosis of Fournier's gangrene complicated by perianal abscess was made and extensive surgical debridement under general anesthesia was performed (Figure 2).

Tissue cultures were obtained for the isolation of the responsible micro-organisms. The necrotic skin in the scrotum and the perianal region was evacuated into a wide-open drainage area, without any damage to the testicles spermatic cords, or external sphincter.
Local wound care was performed twice daily with moist gauze dressings (normal saline) until healthy granulation tissue was observed. Subsequently, dry dressings were used. The infection gradually subsided, the gas gangrene resolved completely, and good granulation was present four weeks after surgery (Figure 3). The patient was discharged in the 45th postoperative day.

Figure 1 - Preoperative image showing considerable edema and scrotal necrosis.

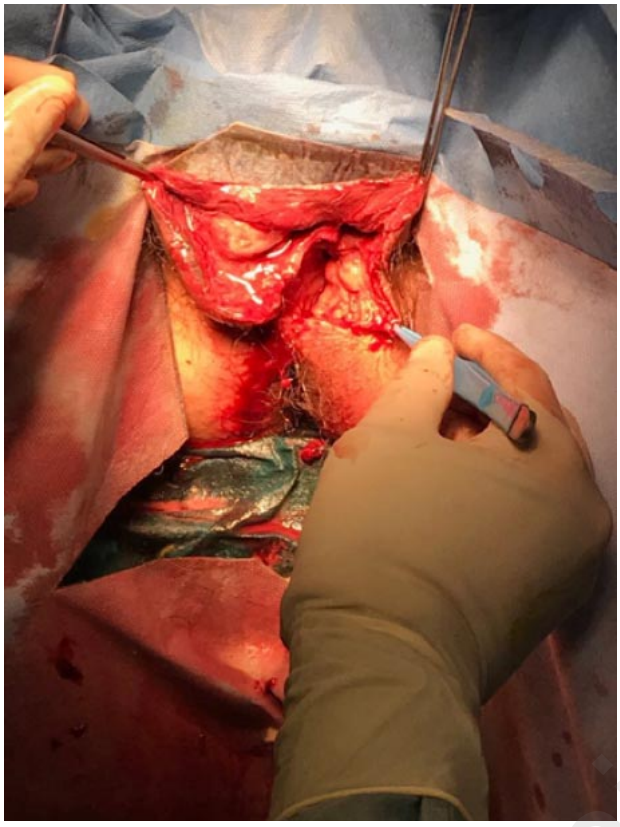

Figure 2 - Intraoperative image of the immediate surgical debridement demonstrating the extensive necrosis of the scrotum and perianal region.

Figure 3 - Image of the surgical wound four weeks after the initial operation showing that the gas gangrene has completely resolved, the wide wound is reduced, and good granulation is present.

Discussion

Fournier's gangrene is a surgical emergency and its early recognition, prompt and aggressive treatment remain the cornerstones of management.

Despite the insight into physiopathological mechanisms, technological progress and the improvement of clinical practice, the mortality rate remains dramatically high, around 20-30% without a clear decreasing trend (6).

Laor et al. identified the Fournier's Gangrene Severity Index - FGSI score related to clinical and laboratory data at admission (heart and respiratory rate, temperature, WBC, hematocrit and serum sodium, potassium, creatinine and bicarbonate) (8).

Affected body surface area (BSA) (Figure 4) is one of the ongoing trends in the search for prognostic factors in Fournier's Gangrene. However, there is no consensus regarding his prognostic value. Some reports show that patients with higher affected BSA are more likely to succumb to the disease and more likely to need multiple debridements (4-7).

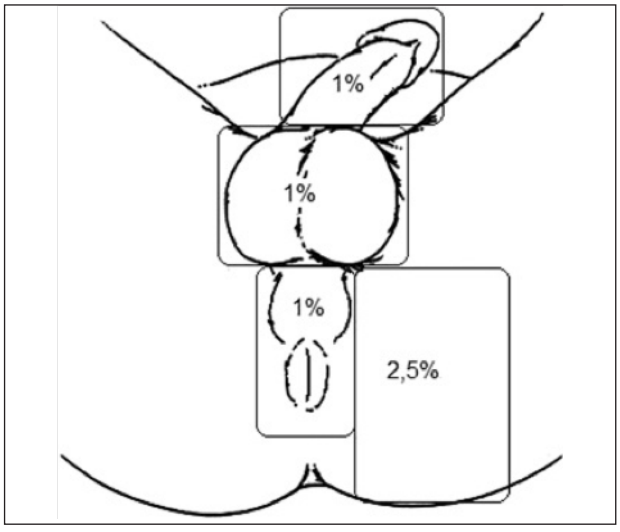

Figure 4 - Adapted nomogram for determining affected BSA.

Having decided for urgent surgery, the hematochemical examinations were only partial. The patient had a Charlson comorbidity equal to 4 and the BSA index well over 3.5%. These data indicated a low of survival rate but the patient had a rapid and complete recovery. However, our patient was not diabetic, had frequent checkups (every 48 hours) and a high education level. Patients with FG operated in the past in our hospital are frequently diabetic, obese, depressed and live in poor sanitary conditions. These patients have a mortality rate close to 50%.

Conclusion

An high social level can be considered a positive prognostic factor for patients affected by FG. It is our opinion that the high social level has allowed the patient to understand well his pathology and allowed a very good hygiene of the sick area. Furthermore, patient compliance allowed close and constant medications. Early recognition and aggressive surgical excision are mandatory for success in patients with Fournier gangrene.

References

1. Eke N. Fournier gangrene: a review of 1726 cases. Br J Surg. 2000;87:718-728.
2. Paty R, Smith AD. Gangrene and Fournier gangrene. Urol Clin North Am. 1992;19:149-162.
3. Elliott D, Kufera J, Myers R. The microbiology of necrotizing soft tissue infections. Am J Surg. 2000;179:361-366.
4. Yanar H, Taviloglu K, Ertekin C, et al. Fournier gangrene: risk factors and strategies for management. World J Surg. 2006;30:1750-1754.
5. Norton KS, Johnson LW, Perry T, et al. Management of Fournier gangrene: an eleven year retrospective analysis of early recognition, diagnosis, and treatment. Am Surg. 2002;68:709-713.
6. Pawłowski W, Wronski M, Krasnodebski IW. Fournier's gangrene. Pol Merkur Lek. 2004;16(97):85-87.
7. Mallikarjuna M, Vijayakumar A, Patil V, Shivswamy B. Fournier's gangrene: current practices. ISRN Surg. 3 December 2012. Doi: 10.5402/2012/942437.
8. Laor E, Palmer LS, Tolia BM, Reid RE, Winter HI. Outcome prediction in patients with Fournier's gangrene. J Urol. 1995 Jul;154(1):89-92.