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PROFILE OF PATIENTS WITH FOURNIER'S SYNDROME TREATED IN A PUBLIC HOSPITAL IN THE: OESTE DO PARANÁ

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Abstract: Goal: To analyze the profile of patients with DES treated in a tertiary public hospital in Oeste do Paraná. **Methods:** A cross-sectional, retrospective and descriptive study was carried out based on the analysis of medical records of patients with FS from January 2012 to November 2016. **Results:** 40 patients with DES were treated in the period: 29 (72.5%) men and 11 (27.5%) women. The mean age was 51.7 ±16.3 years. The mean time of disease evolution, from the initial symptom to admission to the service, was 10.5 ± 1.2 days. All patients had some clinical sign such as pain, bulging, erythema, among others, and associated comorbidities (38 patients - 95%), the most common being type II diabetes mellitus (DM) and systemic arterial hypertension (SAH). The majority (30 patients – 75%) had a probable etiology of perianal abscess. All patients underwent antibiotic therapy and surgical treatment with a mean of 1.8 ± 1.1 surgeries/patient. Nine (22.5%) patients died. There was a strong correlation between the presence of sepsis on admission and mortality. **Conclusion:** Patients with FS in this series had a long time of disease and a high prevalence of comorbidities. It is possible that improvements in the basic health system, with control of underlying chronic diseases and early referral to a specialist, improve the prognosis of these patients.
Keywords: Fournier, gangrene, infection, mortality.

INTRODUCTION

Fournier Syndrome (FS), a clinical entity with wide synonymy, is also known as necrotizing fasciitis, scrotal gangrene, synergistic necrotizing cellulitis, synergistic gangrene, idiopathic gangrene and fulminant gangrene and affects the soft tissues of the perianal, genital and anal regions [1]. -two]. When not treated in time, it can progress to a generalized infection or multiple organ failure [3-4].

It occurs predominantly in males, between the third and sixth decade of life, and the presence of associated comorbidities is common [5]. It is an infectious, aggressive disease that, despite all treatment, has high levels of mortality [6], ranging from 13 to 30.8% in Brazil [1-7]. It represents a public health problem, given its incidence, prevalence, mortality and the high costs in the treatment and rehabilitation process [8].

Given the severity and scarcity of studies that show the profile of patients with FS in Brazil, we sought to analyze the profile of patients, their treatment and clinical evolution in a university hospital in the interior of Paraná - BRA.

METHODS

This research project was approved by the Ethics Committee involving Human Beings of the Universidade Estadual do Oeste do Paraná (UNIOESTE) on the Cascavel/PR campus under number 56997516.1.0000.0107.

This is a cross-sectional, retrospective and descriptive study based on the analysis of physical and electronic medical records of patients with DES treated at the Hospital Universitário do Oeste do Paraná – HUOP/ Cascavel – PR, from January 2012 to November 2016.

Patients were selected according to the inclusion criteria: a) Patients diagnosed with FS admitted to the HUOP from January 2012 to November 2016; b) Over 18 years of age. Patients under 18 years of age and with other diagnoses were excluded.

Data from physical and electronic medical records were collected in a data collection form with information on demography, clinical and laboratory presentation, treatment instituted, evolution, complications and mortality. Efforts were made to maintain the confidentiality of

the information collected and the anonymity of the patients involved in the research.

STATISTICAL ANALYSIS

Numerical variables were tested according to the normality distribution using the Shapiro-Wilk test and, as they had a normal distribution, they were presented as mean and standard deviation. For the proposed correlations according to the objective of the study, Pearson's R test was used, considering 0.9 for plus or minus a very strong correlation, 0.7 to 0.9 positive or negative a strong correlation, 0.5 to 0.7 positive or negative indicates a moderate correlation.

For qualitative variables, frequency distributions were performed and presented in absolute numbers and percentages. The software used was SPSS® Version 22.0. The presentation of information obtained from medical records was performed through tables.

RESULTS

The sample consisted of 40 patients, 29 (72.5%) male and 11 (27.5%) female. The mean age was 51.7±16.3 years. The mean length of hospital stay was 19.6±14.7 days. The main clinical signs were presented in Table 1.

The mean time of disease evolution, from the initial symptom to admission to the service, was 10.5 ± 1.2 days and 9 patients (22.5%) showed signs of sepsis at admission. The main comorbidities are described in Table 2. Two patients reported no comorbidities.

The probable etiology of FS was identified in all patients, 30 (75%) patients with a history and examination compatible with perianal abscess, four after trauma, three after perineal surgeries, two resulting from urological pathologies and one after an animal bite.

All patients underwent antibiotic therapy and surgical treatment for infection control, in addition to concomitant treatment of associated conditions. Seventy-two surgical procedures were performed with a mean of 1.8 ±1.1 procedures/patient. Of these, in four patients (10%) a colostomy was performed to control fecal contamination and in two (5%) a cystostomy, since surgical debridement and/or infection-related edema affected the penile region, inducing obstruction. In 7 (17.5%) patients, reconstructive surgeries were performed in the same hospitalization.

Eight (20%) patients remained hospitalized in the Intensive Care Unit (ICU). Nine (22.5%) patients died. All had signs and symptoms of sepsis on admission (r=0.93**). The remaining patients were discharged and followed up at the HUOP wound clinic.

There was no correlation between the presence of sepsis on admission and the time of disease progression, age or presence of comorbidities. There was no correlation between DM and the presence of perianal abscess as a probable etiology of FS. The correlation between age, time of disease evolution, presence of comorbidities, ICU stay, perineal abscess etiology and number of surgeries per patient with mortality are described in Table 3.

DISCUSSION

This study aimed to analyze the profile of patients, treatment and clinical evolution of patients admitted with DES at a tertiary hospital located in Oeste do Paraná. It was observed that these patients in their totality had local symptoms and commonly associated comorbidities, a long time of disease before admission to hospital, with perianal abscess being the most common origin. The knowledge of these factors can positively interfere in the recognition of these patients, reducing the morbidity and mortality associated with the pathology.

FS is a synergistic necrotizing fasciitis of the perineum and abdominal wall, which

originates from the scrotum and penis in men, and from the vulva and groin in women [9-10]. Fournier's gangrene can also be associated with cuts, burns, abrasions, lacerations, bruises, animal bites, insect bites, subcutaneous and intravenous injections [2]. In our study, the etiology of FS was predominantly associated with perianal abscesses with delayed or incomplete approach. It is possible that early diagnosis, associated with an early surgical approach and adequate postoperative follow-up, prevented some of these patients from evolving to FS.

Fournier syndrome can affect women and children [11]. In Brazil, males (10:1) have a high prevalence [6]. FS affects all age groups, with a mean age of around 50 years [12]. In this study, 72.5% were male and 27.5% were female, and in both sexes the mean age was greater than 51 years.

FS has a pathophysiology characterized by obliterating endarteritis, followed by ischemia and thrombosis of the subcutaneous vessels, which result in necrosis of the skin and of the subcutaneous and adjacent cell tissue (typically it does not cause necrosis, but can invade fascia and muscle), making it possible to enter the FS. normal skin flora. As aerobic and anaerobic bacteria spread, the oxygen concentration in the tissues is reduced; With hypoxia and tissue ischemia, metabolism is impaired, causing greater dissemination of facultative microorganisms, which benefit from the energy sources of the cells, forming gases (hydrogen and nitrogen) responsible for the crackling, demonstrated in the first 48 to 72 hours of infection [13-14]. According to Santos [2] and Mehl [6] signs and symptoms can be found such as: discomfort with painful sensation, high fever, malaise, sweating, apparently uninjured edema, erythema and blistering, evolving into a wound, corroborating the findings. found in the present study.

For clinical treatment, broad-spectrum antibiotics are used, covering gram-positive and gram-negative microorganisms. The surgical procedure is essential [2-15] and consists of extensive debridement of devitalized tissues, with drainage of all purulent collections. The literature demonstrates the importance of debridement, as patients who do not undergo this procedure have a mortality rate of 100% [1-16]. All patients underwent clinical treatment with antibiotic therapy and surgical treatment with surgical debridement as the initial line of treatment.

In a study carried out by Dornelas et al [1] restorative treatment was used in 23 patients based on simple and efficient techniques for each case or area. Thus, small losses were treated with edge-to-edge suture or skin autograft. In our study, 7 (17.5%) patients underwent reconstructive surgery for primary approximation, aiming to reduce the open area, facilitate dressings and early discharge. In all these cases, a reduction in the bloody area was observed, facilitating the realization of dressings. Since no adverse effects were observed in reconstructive surgeries, it has been considered in this service as part of the therapeutic flowchart for these patients, although there is a lack of definitive evidence of benefit.

Despite all the current therapeutic advances, FS continues to present prolonged hospitalization and high mortality rates. Death can occur in patients with prolonged disease, spread of infection and lung involvement, which can be predicted by clinical follow-up and evidence of sepsis [17-18]. In this study, the mean hospital stay was longer than 19 days and 22.5% of the patients died.

There are several limitations in this study. The retrospective nature of the same may have led to the imprecision of the information, due to dependence on the data contained in the medical records. Laboratory tests were

not included in the data collection, since the proposal was only to obtain a general profile of the population, in order to design a prospective study in the future. There were also a small number of patients.

It is concluded that most patients diagnosed with FS treated in a tertiary public service in Oeste do Paraná presented a long period of symptoms prior to admission, local clinical signs, comorbidities (particularly type II DM), with perianal abscess as a probable cause. These patients had a long hospital stay and high mortality. These data suggest the need for improvements in the basic health system, such as monitoring of chronic diseases and early evaluation by a specialist, in order to reduce morbidity and mortality of this entity.

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Main clinical signs	Number of patients (%)
Pain	26 (65%)
Bulging	26 (65%)
Erythema	14 (23%)
Cellulitis	10 (20%)
Sepsis	9 (22%)
Purulent Collection	9 (22%)
Hyperemia	7 (17%)
Fever	6 (15%)
Tissue necrosis	5 (12%)

Table 1 – Main clinical signs in patients with FS.

Main comorbidities	Number of patients (%)
DM Type II	28 (70%)
HAS	14 (35%)
Heart diseases	6 (15%)
Dyslipidemia	3 (7,5%)
Obesity	3 (7,5%)
Smoker	3 (7,5%)
Repeated perianal abscess	2 (5%)
Prostate disease	2 (5%)
Urethral stricture	1 (2,5%)
Hypothyroidism	1 (2,5%)
Previous surgery in the inguinal region	1 (2,5%)
Abdominoperineal amputation	1 (2,5%)
MMI finger amputation	1 (2,5%)
Previous Kidney Transplant	1(2,5%)

Table 2 – Main comorbidities in patients with FS.

Correlations	Deaths (r)
Age (years)	0,16
Disease evolution time (days)	0,05
Presence of comorbidities	-0,06
ICU stay	0,57*
Etiology perineal abscess	-0,05
Number of surgery per patient	0,30
Sepsis on admission	0,93**

Note: * Moderate correlation; ** Strong correlation.

Table 3 - Factors associated with mortality in SF.