Assessment of Adult Patients with a Diagnosis of Necrotizing Fasciitis: A Three-Year Experience

Nekrotizan Fasiit Tanısı Olan Yetişkin Hastaların Değerlendirilmesi: Üç Yıllık Deneyim

Abdifatah AHMED, Nor ABDI YASIN, Sadettin ER

1Department of General Surgery, Mogadishu Somalia-Turkey Recep Tayyip Erdoğan Training and Research Hospital, Somalia.

Abstract

The aim of this study is to evaluate experiences about diagnosis, follow-up and treatment of necrotizing fasciitis (NF) patients who admitted to our hospital. The records of patients who had a diagnosis of NF that referred to our hospital between 01.01.2017 and 01.01.2020 were retrospectively analyzed. Patients' demographic feature, additional disease, amount of operations, length of hospital stay and responses for treatment was evaluated. All of 20 patients with NF were followed up and treated at our hospital. We found 15 (75%) of the patients were male and 5 (25%) were female. The mean age of the patients was 53 (Min: 28 - Max: 80). While nine (45%) of patients had diabetes mellitus. Concerning the site of infection, 13 (65%) patients had abdominal wall - (NF of the anterior, lateral and posterior regions), the four (20%) patients of NF involved the chest wall- (NF of the anterior and posterior regions), three (15%) patients perianal region with Fournier’s gangrene (secondary to NF). In 75% of patients received double antibiotic (ceftriaxone + metranidazole combination) therapy. Then, the majority of patients were exposed to lots of debridements and diversion colostomy, ranging from 1 to 6 surgeries (mean being two operations). Negative pressure wound closure was applied to 17 (85%) of the patients after debridement and three (15%) of the patients were treated with open dressing . Skin grafting was tackled in our hospital for 13 of these patients while four (31%) of the patients were treated with surgical flap methods. The length of hospital stay varies from 90 days to one day. This time was 37 (1-90). Mortality in this study was found to be 30%- one patient dying on the day of admission after the broad debridement. NF is a malady that is often related with mortality when it is not treated. In many patients, are immunosuppressed and that's why diagnosis can be delayed. In patients with early diagnosis, fast and broad debridement for treatment can achieve enough outcomes.

Özet

Hastanemize başvuran nekrotizan fasiit (NF)'li hastaların tanı, takip ve tedavisi ile ilgili deneyimlerimizizi değerlendirirmektir. 01.01.2017 ve 01.01.2020 tarihleri arasında hastanemize başvuran NF tanisi alan hastaların kayıtları retrospektif olarak incelendi. Hastaların demografik özellikleri, ek hastalıkları, ameliyat sayları, hastanede kalış süreleri ve tedaviye yanıtları değerlendirildi. Toplam 20 NF hastası takip ve tedavi edildi. Hastaların 15'i (%75) erkek, beşi (%25) kadın idi. Yaş ortalaması 53 (Min: 28 - Max: 80) idi. Hastaların 9'unda (%45) diyabetes mellitus vardı. Enfeksiyon yerleri ile ilgili olarak, 13 (%65) hastada karnı duvarı - (ön, lateral ve...
Material and Methods

Study Design

Mogadishu, Somalia, Turkey, Recep Tayyip Erdogan Research and Training Hospital after obtaining the approval of the Ethics Committee, records of the NFA patients were analyzed retrospectively between 01/01/2017 and 01/01/2020. Age, gender, co morbidity, total number of surgeries, length of hospital stay, fever, place of infection, laboratory results, microbiological cultures and timing. Thereafter, the number and response to treatment were recorded.

Statistical Analysis

Data “Statistical Package for the Social Sciences (SPSS) for Windows 21.0. Descriptive statistics minimum for continuous variables and maximum, categorical variables frequency and percentage. Operation characteristics and risk factors were compared. Statistical p <0.05 was considered significant.

Results

All of 20 patients with NF were followed up and treated at our hospital. We found 15 (75%) of the patients were male and 5 (25%) were female. The mean age of the patients was 53 (Min: 28 - Max: 80). While nine (45%) of patients had diabetes mellitus. Concerning the site of infection, 13 (65%) patients had abdominal wall - (NF of the anterior, lateral and posterior regions), the four (20%) patients of NF involved the chest wall– (NF of the anterior and posterior regions), three (15%) patients perianal region with Fournier’s gangrene (secondary to NF). Fever in 14 cases was observed in bacterial culture of two patients. In 75%of patients received double antibiotic (ceftriaxone + metranidazole combination) therapy. Later they were tailored as per culture and sensitivity reports.

Then, the majority of patients were exposed to lots of debridements and diversion colostomy, ranging from 1 to 6 surgeries (mean being two operations).

Introduction

Necrotizing fasciitis (NF) is a rare malady that results in high morbidity and mortality unless treated in its early term. [1]. But, early period, it is difficult to distinguish from another superficial skin situations like cellulitis [2]. In the presence of symptoms such as pain, fever and erythema, doctors should have a high level of suspicion for referral to surgery [3]. NF is a quickly advancing soft tissue infection mainly involving the superficial fascia and subcutaneous tissue. It is leaded to Streptococcus pyogenes or synergistic infection of aerobic and facultative anaerobic bacteria. NF has been divided into three types based on microbiological cultures. Type-I is polymicrobial and generally caused by an aerobic and anaerobic organisms. Type-II caused by Streptococci only or with staphylococci [4]. Marine vibrio is the cause of Type-III [5].

Table 1. Demographic and statistical data of patients with necrotizing fasciitis. Total patients (n=20)

| Age; mean (Min-Max) | 53 (28-80) |
|---------------------|------------|
| Gender: Male 15 (75%), Female 5 (25%) |
| Chest wall (%): 4 (20%) |
| Co-morbidities: Diabetic 9 (45%) |
| Sign: Fever 14 (70%) |
| Culture (%): S. aureus 7 (35%), polymicrobial 11 (55%), No growth 2 (10%) |
| Length of hospital stay, mean; 37 day (1-90 day) |
Necrotizing Soft all of ac observed to be 30% [2]. Despite progress in care, mortality from NF is an uncommon but potentially mortal malady. It is a surgical emergency with a high morbidity and mortality rate. This situation is more widespread in men, diabetes mellitus being the most common in extremities. We report here typical cases of necrotizing infections of the trunk, this type of NF is a rare but life-threatening infection with high mortality rate [3].

We present twenty cases of NF managed in our hospital in Somalia 3 years. 13 (65%) patients had abdominal wall - (NF of the anterior, lateral and posterior regions), 4 (20%) patients of NF involved the chest wall- (NF of the anterior and posterior regions), 3 (15%) patients perianal region with fourier's gangrene (fourier gangrene secondary to necrotizing fascitis). The atypical NF is increasing worldwide and there is no recent data available in our country, we tried in this study to elude the atypical NF and some of its risk factors among the adult patients attending to our hospital. The atypical necrotizing fasciitis has risk factors; in this research we found that the most common risk factor was diabetic. Our study we can conclude that males are more prone to develop.

NF is an uncommon but potentially mortal malady. It is a surgical emergency with a high morbidity and mortality rate. This situation is more widespread in men, diabetes mellitus being the most widespread comorbid malady. The NF more common in extremities. We report here typical cases of necrotizing infections of the trunk; this type of NF is a rare but life-threatening infection with high mortality rate [8].

NF is many times severe, rapidly advancing, and related with sepsis and multi-organ failure. Despite progress in care, mortality from NF remains high, approximately between 20% and 30% [9]. Mortality rate, in present study was observed to be 30%- one patient dying on the day of acceptance after the broad debridement.

The limitation of this study was retrospective and limited number of patients included in the study. As a result, in patients with NF, we think that early diagnosis and drainage are crucial for reducing the spread of the disease.

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