

Short Report

Open Access, Volume 5

Silent trauma leading to necrotizing fasciitis in a diabetic patient: A case reportJaykumar Jakasaniya^{1*}; Pragati Chhikara¹; Kashyap Patel²; Smit Kotadiya³¹Medical Doctor, Batumi Shota Rustaveli State University, Adjara, Georgia.²Intern, GMERS Medical College and Hospital, Morbi, India.³Intern, GMERS Medical College and Hospital, Junagadh, India.***Corresponding Author: Jaykumar Jakasaniya**Medical Doctor, Batumi Shota Rustaveli State
University, Adjara, Georgia.
Email: jayjaka12555@gmail.com

Received: Sep 25, 2024

Accepted: Oct 15, 2024

Published: Oct 22, 2024

Archived: www.jcimcr.org

Copyright: © Jakasaniya J (2024).

DOI: www.doi.org/10.52768/2766-7820/3306

Abstract

Necrotizing Fasciitis (NF) is a severe, rapidly spreading infection of deep soft tissues that can result in significant morbidity and mortality if not treated promptly. This condition is more common in men and primarily affects the lower limbs. Diabetes is a significant risk factor for lower limb ischemia. This case report describes a 60-year-old diabetic male who developed NF in his left foot as a result of a minor, unnoticed trauma, which was exacerbated by his habit of walking barefoot. The case emphasizes the importance of early detection, timely surgical debridement, and appropriate antibiotic therapy in managing NF, especially in diabetic patients, to avoid life-threatening outcomes.

Keywords: Diabetes; Subtle trauma; Fasciitis.**Abbreviations:** NF: Necrotizing Fasciitis; CRP: C-Reactive Protein; IV: Intravenous; SpO₂: Oxygen Saturation.**Introduction**

Necrotizing Fasciitis (NF) is defined as a severe infection of the deep soft tissue, including fascia. It spreads rapidly, resulting in high morbidity and mortality [1]. Necrotizing fasciitis has long been reported from almost every part of the world and is now understood to be caused by either a single organism or, more frequently, a variety of microbes—both aerobic and anaerobic [2]. Necrotizing fasciitis appears to be more common in men, possibly due to the higher incidence of trauma in men [2,3]. The infection affected the head and neck (3%), the upper limb (13%), the trunk (13%), the lower limb (61%), bilateral lower limbs (3%), and the perineum and scrotum (10%) [4]. Diabetic patients were also more likely to develop polymicrobial infection or monomicrobial NF caused by *Klebsiella pneumoniae* [5]. Diabetic patients are also at risk of lower limb ischemia due to progressive atherosclerosis of the vessels distal to the knee and proximal to the ankle. In severe cases, the affected area eventu-

ally becomes mummified (dry gangrene) [6]. Multiple studies have concluded that diabetes is the most common risk factor. Other known risk factors include female gender, malnutrition, age >50, chronic liver and kidney disease, cancer, minor trauma, hypertension, cardiac disorders, steroid use, obesity, and peripheral vascular disease [7,8]. Across all studies, swelling was the most common presenting symptom, followed by pain and erythema [9] (Figure 1). Emergency surgical debridement and broad-spectrum antibiotic therapy remain the most effective treatments for reducing NF mortality rates [7]. Tissues should be thoroughly resected until there is no more evidence of infection. The most important determinant of survival is initial surgery, and the wound must be thoroughly examined following initial debridement [1]. Negative pressure wound therapy has been shown to be effective in wound bed preparation and healing [10]. In this case report, we describe a diabetic patient who developed necrotizing fasciitis after an unnoticed minor trauma. The case emphasizes the importance of keeping a high

level of suspicion for necrotizing fasciitis in diabetics, especially when silent trauma is suspected. Early detection and surgical intervention are critical in improving the outcomes for affected patients.

Case presentation

A 60-year-old male with a 9-year history of well-controlled diabetes mellitus presented with fever and a painful, swollen left foot. He reported that the swelling and erythema on the dorsal aspect of the foot had developed progressively over the past 7 days, accompanied by marked pain during walking (Figure 1). The patient denied any history of smoking, alcohol use, or preceding trauma, although he habitually walked barefoot in his occupational environment. For the fever, he had been taking paracetamol 650 mg as needed. His diabetes was managed with 2.5 mg of glipizide and 500 mg of metformin hydrochloride, and his random blood sugar at the time of presentation was 96 mg/dL. On initial examination, his temperature was 40°C, with a respiratory rate of 15 breaths per minute, a blood pressure of 135/85 mmHg, a heart rate of 80 beats per minute, and an oxygen saturation (SpO₂) of 96%. The dorsal aspect of his left foot was notably swollen, erythematous, tender to palpation, and showed signs of necrosis. Laboratory investigations revealed a white blood cell count of 12,000 cells/mm³, a C-Reactive Protein (CRP) level of 8.9 mg/L, and a hemoglobin level of 14.7 g/dL. Screening for HIV, Hepatitis B, and Hepatitis C was negative, and other findings were unremarkable. His family history was significant for his mother having type 2 diabetes and hypertension. The patient was empirically started on Intravenous (IV) antibiotics, including piperacillin-tazobactam 4.5 g, vancomycin 500 mg, and clindamycin 600 mg. Surgical debridement was performed, and the surgical findings confirmed the involvement of fascia.



Figure 1: The initial presentation of the left foot revealed extensive erythema, swelling, and necrosis consistent with necrotizing fasciitis.

Discussion

Necrotizing Fasciitis (NF) is a severe infection of the skin and soft tissues that spreads rapidly along the deep fascia. If treatment is delayed, it develops into a fatal soft tissue infection with a high mortality rate. Although necrotizing fasciitis is frequently described as pain that is out of proportion to the clinical findings, diabetic patients may be unable to localize their symptoms. Instead, they seek medical attention for fatigue or high blood glucose levels [6]. Early diagnosis for emergency surgical

debridement and broad-spectrum antibiotic therapy were the most effective treatments for reducing NF mortality rates [7]. Early surgical exploration is the best course of action in an uncertain case. This case demonstrates an unusual presentation in which silent trauma resulted in the development of NF in a diabetic patient, emphasizing the need for increased clinical vigilance. The progression from silent trauma to NF emphasizes the significance of including NF in the differential diagnosis for any diabetic patient presenting with rapidly worsening symptoms in a previously asymptomatic area. Traditional signs of infection may be subtle or atypical, making early detection difficult. As a result, a high level of suspicion is required, especially when diabetic patients present with unexplained pain, swelling, or erythema. It is commonly misdiagnosed as cellulitis or an abscess [9]. NF is essentially a surgical emergency, so timely and adequate surgical debridement is critical for survival [10]. Delays in diagnosis and treatment are associated with higher morbidity and mortality [2].

Conclusion

This case report represents the silent but devastating nature of necrotizing fasciitis, particularly in diabetic patients whose symptoms may not be directly related to the severity of the underlying disease. The progression from an unnoticed minor trauma to a severe, life-threatening infection emphasizes the importance of clinicians staying vigilant for NF in diabetic patients, regardless of whether an obvious injury exists. Immediate surgical intervention, combined with appropriate antibiotic therapy, is still critical for managing NF and lowering the high mortality risk. This report emphasizes the significance of early detection and intervention in diabetic patients who show atypical signs of infection, as these measures are critical in avoiding catastrophic outcomes.

Compliance with ethical standards: No conflicts of interest. No research involving human participants or animals was conducted. Informed/written consent was taken from the patient for the publication of the case report. No funding was provided for the creation of this manuscript. There are no material financial or non-financial interests to disclose by the authors.

References

1. T Shimizu, Y Tokuda. Necrotizing fasciitis, *Internal Medicine.* 2010; 49(12): 1051-1057. doi: 10.2169/internalmedicine.49.2964.
2. J Sadasivan, N Maraju, A Balasubramaniam. Necrotizing fasciitis. 2013. doi: 10.4103/0970-0358.121978.
3. WJ Rea, WJ Wyrick. Necrotizing Fasciitis.
4. JM Wang, HK Lim. Necrotizing fasciitis: Eight-year experience and literature review, *Brazilian Journal of Infectious Diseases.* 2014; 18(2): 137-143. doi: 10.1016/j.bjid.2013.08.003.
5. NC Cheng, HC Tai, SC Chang, CH Chang, HS Lai. Necrotizing fasciitis in patients with diabetes mellitus: Clinical characteristics and risk factors for mortality, *BMC Infect Dis.* 2015; 15(1): doi: 10.1186/s12879-015-1144-0.
6. BM Baumann, RA Patterson, MC Farnar. Necrotizing Fasciitis in a Woman with a Diabetic Foot Infection and Peripheral Neuropathy Case Report. 2010.

-
7. P Khamnuan, W Chongruksut, K Jearwattanakanok, J Patumanond, S Yodluangfun, et al. Necrotizing fasciitis: Risk factors of mortality, Risk Manag Healthc Policy. 2015; 8: 1-7. doi: 10.2147/RMHP.S77691.
 8. AD Deshpande, M Harris-Hayes, M Schootman. Epidemiology of Diabetes and Diabetes-Related Complications Diabetes Special Issue. 2008. www.ptjournal.org.
 9. T Goh, LG Goh, CH Ang, CH. Wong. Early diagnosis of necrotizing fasciitis. 2014. doi: 10.1002/bjs.9371.
 10. X Sun, T Xie. Management of Necrotizing Fasciitis and Its Surgical Aspects. 2015. doi: 10.1177/1534734615606522.