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DEVOURING FLESH: A CASE REPORT ON NECROTIZING FASCILITIS

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ABSTRACT
Necrotizing fasciitis (NF) is a rare, rapidly progressing soft tissue infection characterized by extensive necrosis of fascia and subcutaneous tissues. This case report describes a 23-year-old male with post-traumatic necrotizing fasciitis of the left lower leg following fasciotomy. Pseudomonas aeruginosa and Klebsiella species were identified as causative organisms. Treatment involved broad-spectrum antibiotics, surgical debridement, and successful splitthickness skin grafting. Early intervention and comprehensive postoperative care led to favorable recovery.

KEYWORDS: Necrotizing fasciitis, Post-traumatic infection, Fasciotomy, Pseudomonas aeruginosa, Klebsiella species, Split skin grafting.

INTRODUCTION
Necrotizing fasciitis (NF) is a fulminant, life-threatening soft tissue infection characterized by the rapid necrosis of fascia and subcutaneous tissues, often sparing the skin and muscles in its early stages. The disease typically progresses with alarming speed, resulting in significant morbidity and mortality if not recognized and managed promptly. While NF can occur in any anatomical region, the lower extremities are a frequent site of involvement, particularly following trauma, surgical interventions, or in individuals with comorbid conditions such as diabetes mellitus or immunosuppression.

The etiology of NF is commonly polymicrobial, encompassing a synergistic mix of aerobic and anaerobic bacteria. Gram-negative pathogens, including Pseudomonas aeruginosa and Klebsiella species, are increasingly implicated in hospital-acquired and trauma-associated infections, contributing to diagnostic challenges and therapeutic resistance. The presence of these multidrug-resistant organisms (MDROs) not only complicates empirical antimicrobial selection but also correlates with poorer clinical outcomes.

Early recognition of necrotizing fasciitis remains a clinical challenge, as initial signs may be nonspecific and easily mistaken for cellulitis or abscess. The cornerstone of management lies in high clinical suspicion, prompt imaging when appropriate, aggressive surgical debridement, and targeted antimicrobial therapy based on culture and sensitivity results.

This case report describes a rare and aggressive post-traumatic NF infection of the lower limb caused by Pseudomonas aeruginosa and Klebsiella species, underscoring the need for heightened clinical vigilance, especially in trauma patients, and illustrates the importance of a multidisciplinary approach for optimal outcomes.

CASE PRESENTATION
A 23-year-old male presented with pain, swelling, erythema, and necrosis of the left lower leg, suggestive of necrotizing fasciitis (NF). The condition developed following recent trauma to the left leg, leading to a fasciotomy. The patient was unaware of having NF before the procedure. Examination revealed severe erythema, warmth, swelling, and tissue necrosis with foul-smelling discharge. Laboratory findings were as follows.

Lab Test	Result
White Blood Cells (WBC)	4160 [WBCs/µL]
C-Reactive Protein (CRP)	28.0 [mg/dL]
Neutrophils	79%
Lymphocytes	14%

Culture reports confirmed a polymicrobial infection involving Pseudomonas aeruginosa and Klebsiella

species (Scandy). Treatment included broad-spectrum antibiotics (Inj. Meropenem, Tab. Cifigen CL, and Tab. Levoflox 500 mg) and pain management (Inj. Tramazac, Inj.

Paracetamol, Inj. Dolonex, and Tab. Ultracet). Supportive care involved intravenous fluids, electrolyte correction with Inj. Lactagard, and additional medications like Tab. Disperzyme, Tab. Rafron, Tab. Rabiround DSR, and TRD Continued.

The patient underwent split-thickness skin grafting under spinal anesthesia to cover the debrided area. The postoperative period was uneventful, with good graft take-up and healing. He was discharged with Burnocool ointment for local application, Tab. Becozinc (one tablet daily for 10 days), and Tab. Levoflox 500 mg (one tablet daily for 10 days). The patient showed significant clinical improvement, with complete healing of the grafted area and no postoperative complications.

DISCUSSION

Necrotizing fasciitis (NF) is a life-threatening soft tissue infection characterized by rapid tissue destruction, systemic toxicity, and high mortality rates. It often requires prompt diagnosis and aggressive surgical intervention to prevent disease progression. The condition is frequently polymicrobial, with common pathogens including Streptococcus pyogenes, Staphylococcus aureus, Pseudomonas aeruginosa, and Klebsiella species. The presence of Pseudomonas aeruginosa and Klebsiella species in this case highlights the potential severity of mixed infections, particularly when involving resistant organisms.

In this case, the patient presented with post-traumatic necrotizing fasciitis of the left lower leg, necessitating immediate fasciotomy to control infection and prevent further tissue damage. The culture report confirmed infection with Pseudomonas aeruginosa and Klebsiella species, both of which are known to cause aggressive tissue necrosis and possess antibiotic resistance mechanisms. Treatment involved a combination of surgical debridement, broad-spectrum antibiotics, and supportive care. The administration of antibiotics such as meropenem, along with appropriate wound care, successfully managed the infection. Following stabilization, splitthickness skin grafting was performed with excellent graft take-up and an uneventful postoperative recovery.

This case emphasizes the importance of early surgical intervention, appropriate antimicrobial therapy, and meticulous wound care in managing necrotizing fasciitis. Additionally, the successful outcome underscores the importance of identifying and targeting specific pathogens to ensure optimal treatment. Continued awareness and timely management are essential to improve prognosis in patients with necrotizing fasciitis, particularly when dealing with resistant organisms.

CONCLUSION

Effective management of necrotizing fasciitis requires prompt surgical intervention and targeted antimicrobial therapy. In this case, fasciotomy followed by skin grafting and appropriate antibiotics led to successful recovery. Early diagnosis and comprehensive treatment are essential for improving outcomes and managing resistant infections.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

ETHICAL STATEMENT

Ethical approval is not applicable in this case report.

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