Fall 2014

Necrotizing Fasciitis

Holly Herron
Otterbein University, holly.herron@otterbein.edu

Follow this and additional works at: https://digitalcommons.otterbein.edu/stu_msn
Part of the Bacterial Infections and Mycoses Commons, Medical Pathology Commons, Nursing Commons, and the Skin and Connective Tissue Diseases Commons

Recommended Citation
Herron, Holly, "Necrotizing Fasciitis" (2014). Master of Science in Nursing (MSN) Student Scholarship. 15.
https://digitalcommons.otterbein.edu/stu_msn/15

This Project is brought to you for free and open access by the Student Research & Creative Work at Digital Commons @ Otterbein. It has been accepted for inclusion in Master of Science in Nursing (MSN) Student Scholarship by an authorized administrator of Digital Commons @ Otterbein. For more information, please contact shickey@otterbein.edu.
Necrotizing Fasciitis

Holly Herron, DNP, RN, CNS, CCRN, CEN, EMT-P
Otterbein University, Westerville, Ohio

Introduction

Necrotizing fasciitis also known as necrotizing soft tissue infections (NSTIs) is a rare life-threatening infection that involves the skin and soft tissue. A rapid and accurate diagnosis of NSTIs must be identified by healthcare providers to diminish mortality and morbidity. NSTIs are characterized by progressive necrosis of subcutaneous tissue and fascia involving large areas, making it a difficult diagnosis (Lin, Chung, Liu, & Chen, 2013). Necrotizing fasciitis is also known as “flesh eating”, a term that remains unnerving with necrotizing fasciitis patients today.

Pathophysiology

The pathogenesis of NSTIs is comprised of several micro-organisms including aerobic, anaerobic and mixed flora (Lin et al., 2011). Group A Streptococcus (GAS; Streptococcus pyogenes) is a primary contributor responsible for necrotizing fasciitis (Lin et al., 2011). Other co-aggregates include Staphylococcus aureus or methicillin-resistant Staphylococcus aureus (MRSA) (Shiroff, et al., 2011). In recent years the bacteria which causes this infection has been described by the media as “flesh eating,” a term that remains unnerving with necrotizing fasciitis patients today.

Type II NSTIs patients are usually young, generally healthy with a history of surgical wound debridement of the infected tissue. Preparation for hyperbaric therapy was initiated. However, the extensive involvement of the infection was significant and the patient became too hemodynamically unstable to utilize hyperbaric therapy.

Outcome

More than 2000 years have passed since Hippocrates first identified necrotizing fasciitis. However, mortality remains high (25%-35%) despite recent medical advancements (Wilson & Schneir, 2013). It is evident that the inability to accurately diagnose NSTIs continues to Evansville nurses.

Further research is required to identify definitive indicators of NSTIs to improve the diagnosis and management of NSTIs and diminish the mortality and morbidity of this life-threatening disease process.

References Cited


Case Study

Evolving Clinical Presentation & Initial Treatment

Upon arrival the ED staff were not hypotensive and tachycardic, fluid resuscitation was initiated with normal saline. The “plethora-like” skin on her nose was becoming larger, more edematous and was now involving her face and neck. Triple antibiotic coverage was initiated for a possible diagnosis of necrotizing fasciitis. The patient was transported by helicopter to a tertiary care facility and admitted to the Intensive Care Unit (ICU).

Clinical Diagnosis

A diagnosis of necrotizing fasciitis was confirmed with an immediate surgical consultation to evaluate the patient for emergent surgical debridement of the infected tissue. Preparation for hyperbaric therapy was initiated. However, the extensive involvement of the infection was significant and the patient became too hemodynamically unstable to utilize hyperbaric therapy.

Treatment Considerations

Management of NSTIs requires rapid diagnosis and treatment (Schwartz et al., 2013). Patients diagnosed with NSTIs must receive immediate interventions focused on critical care support, antibiotic therapy, and aggressive surgical treatment (Friederichs et al., 2013). The diagnosis and treatment of NSTIs (NP) are met with a difficult challenge in the diagnosis and treatment of NSTIs.

The differential diagnosis between a SSTI and a NSTI must be met with the lack of detail and poor clinical indicators to assist in the differentiation of these infections. NSTIs can be difficult to identify due to a misleading early presentation of the infection (Fudol & Smith, 2014).

Cardinal skin signs including erythema, warmth and require the physician and NP to consider NSTIs (Fudol & Smith, 2014). Determination of when to manage these patients medically versus surgically remains a dilemma for practitioners. The implications of an incorrect diagnosis can be devastating and life-threatening for the patient.

Conclusion

The Center for Disease Control and Prevention estimates between 500-1000 new cases of GAS necrotizing fasciitis occur annually in the United States and accounts for 6%-7% of all invasive GAS infections (Lin et al., 2013).

More than 2000 years has passed since Hippocrates first identified necrotizing fasciitis. However, mortality remains high (25%-35%) despite recent medical advancements (Wilson & Schneir, 2013). It is evident that the inability to accurately diagnose NSTIs continues to Evansville nurses.

Further research is required to identify definitive indicators of NSTIs to improve the diagnosis and management of NSTIs and diminish the mortality and morbidity of this life-threatening disease process.

Introduction

Necrotizing soft tissue infections tend to occur as one of two broad clinical categories known as Type I and Type II with each type characterized by certain patient populations, clinical histories and presentations, and microorganisms (Shiroff & Gevacis, 2012).

Type I NSTIs Patients are usually young, generally healthy with a history of surgical wound debridement of the infected tissue. Preparation for hyperbaric therapy was initiated. However, the extensive involvement of the infection was significant and the patient became too hemodynamically unstable to utilize hyperbaric therapy.

Type II NSTIs Patients are usually young, generally healthy with a history of surgical wound debridement of the infected tissue. Preparation for hyperbaric therapy was initiated. However, the extensive involvement of the infection was significant and the patient became too hemodynamically unstable to utilize hyperbaric therapy.

Outcome

More than 2000 years have passed since Hippocrates first identified necrotizing fasciitis. However, mortality remains high (25%-35%) despite recent medical advancements (Wilson & Schneir, 2013). It is evident that the inability to accurately diagnose NSTIs continues to Evansville nurses.