

NECROTIZING FASCIITIS OF THE ABDOMINAL WALL: A RARE INFECTION OF THE DEEPER LAYERS OF SKIN AND SUBCUTANEOUS TISSUES

K. Stratakis, An. Katseli, M. Zairis , K.E. Papista, N. Korcanas, S. Theodoroleas, D. Ntzialas, P. Antoniou Ap. Krikelis, Em. Tzirakis, An. Zevlas
3rd Surgical Department, General Hospital of Athens G. Gennimatas

INTRODUCTION

- Necrotizing fasciitis, also known as flesh-eating disease, is a rare infection of the deeper layers of skin and subcutaneous tissues, and easily spreads across the fascial plane within those tissues.⁽¹⁾
- As bacterial toxins and the immune response cause vasoconstriction of the vasculature, the fascial spaces become avascular resulting in necrosis, which also prevents penetration of antibiotics into the tissues.⁽¹⁾
- Common causes are Group A streptococcus (GAS) (*Streptococcus pyogenes*), *Staphylococcus aureus*, *Vibrio vulnificus*, *Clostridium perfringens*, and *Bacteroides fragilis*. Mortality ranges from 4.2 to 38% with improving prognosis as time to treatment decreases.⁽²⁾
- We present a case of a 56-year-old man with a rare presentation of necrotic fasciitis of the lower abdominal wall.

CASE

A 56-year-old male was presented to the emergency surgical department presenting abdominal pain and severe erythema on the lower abdomen with important regions of cutaneous necrosis. Physical examination revealed abdominal pain on palpation. Medical history revealed DM II on metformin, MI two years ago and chronic alcohol use disorder (AUD) . He refers some cutaneous lesions the last two weeks at the lower abdominal area. He was presented at the Emergency Surgical Department with the following image.



Preoperative image of the patient

The laboratory tests indicated high levels of CRP , around 500 and leukocytosis. The patient was admitted in the 3rd Surgical Department of General Hospital of Athens G. Gennimatas. for further treatment. After optimization, he was admitted in OR for surgical cleansing and debridement of the necrotic tissues



Intraoperative photo – laborious surgical extraction and debridement of necrotic tissues

At the same time urologic and plastic consultation was done, intraoperatively. The surgical extraction of tissues was laborious. The patient was admitted, at the immediate postoperative period, in the ICU and after one week, he was readmitted to our surgical department.



Intraoperative results of surgical cleansing

In the immediate postoperative period , after his postoperative stabilization, a vacuum wound therapy was applied with positive results and the patient was re operated by the plastic surgeons for the reconstruction of his wound



Vac Treatment results



Post Plastic Surgery reconstruction results

DISCUSSION

- Early diagnosis is key.
- The disease is classified as type I (polymicrobial infection), type II (monomicrobial) and type III gas gangrene, or clostridial myonecrosis.⁽³⁾
- Type I infection involves anaerobic species in combination with one or more facultative anaerobic streptococci (other than group A) and members of the Enterobacteriaceae family.⁽³⁾
- Type II infection is commonly caused by group A streptococci or other beta-hemolytic streptococci that are isolated alone or in combination with other species, most frequently *S. aureus*. These infections are also commonly referred as flesh eating infection.⁽³⁾
- In advanced infection, high fever and systemic toxicity are generally observed.⁽¹⁾
- Individuals with positive blood cultures typically have poorer prognosis and higher mortality rates.⁽¹⁾
- Treatment of necrotizing infection consists of early and aggressive surgical exploration and debridement of necrotic tissue, together with broad spectrum empiric antibiotic therapy and hemodynamic support as necessary.⁽⁴⁾
- Thus, our patient during the perioperative period received a broad-spectrum antibiotic therapy
- Acceptable antibiotic regimens prior to identification of the causative organism(s) include administration of a carbapenem or beta-lactam/beta-lactamase inhibitor, together with clindamycin (600 to 900 milligrams intravenously every eight hours), as well as an agent with activity against MRSA.⁽⁴⁾
- A high index of suspicion is important in view of the paucity of specific cutaneous findings.
- The most effective treatment includes: early and aggressive surgical debridement, broad spectrum antibiotics and hemodynamic support

CONCLUSION

Clinicians should be wary of necrotizing fasciitis among those with soft tissue infections and predisposing factors. Early diagnosis is key, but unfortunately is missed in 85 to 100% of cases since necrotizing fasciitis is often confused with cellulitis, myositis, or deep-seated abscess. A high index of suspicion is important in view of the paucity of specific cutaneous findings. The most effective treatment includes: early and aggressive surgical debridement, broad spectrum antibiotics and hemodynamic support

REFERENCES

1. Childers BJ, Potyondy LD, Nachreiner R, et al. Necrotizing fasciitis: a fourteen-year retrospective study of 163 consecutive patients. *Am Surg* 2002;68:109-16. 2. Bilton BD, Zibari GB, McMillan RW, et al. Aggressive surgical management of necrotizing fasciitis serves to decrease mortality: a retrospective study. *Am Surg* 1998;64:397-400. [PubMed] [Google Scholar] Menzies D. Peritoneal adhesions: incidence, cause and prevention. *Ann Surg* 1992; 24:29-45
2. Bilton BD, Zibari GB, McMillan RW, et al. Aggressive surgical management of necrotizing fasciitis serves to decrease mortality: a retrospective study. *Am Surg* 1998;64:397-400. . Teng HC, Nawawi O, Ng KL, Yik YI. Phytobezoar: an unusual cause of intestinal obstruction. *Biomed Imaging Interv J* 2005; 1:e4
3. Bachmeyer C, Sanguina M, Turc Y, et al. Necrotizing fasciitis due to *Serratia marcescens*. *Clin Exp Dermatol* 2004;673-4 Swift RI, Wood CB, Hershman MJ. Small bowel obstruction due to phytobezoars in the intact gastrointestinal tract. *J R Coll Surg Edinb* 1989; 34:267-9.
4. Schwartz MN. Cellulitis and subcutaneous tissue infections. Mandell GL, Bennett JE, Dolin R. Principles and practice of infectious diseases. 6th ed. Philadelphia: Churchill Livingstone; 2005.
5. Necrotizing Fasciitis of the Abdominal Wall Caused by *Serratia Marcescens*. Naheed A Lakhani 1,✉, Umesh Narsinghani 2, Ritu Kumar 3