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Case Report

Fatal necrotizing fasciitis of the back in an uremic young man

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ABSTRACT

We present a case of 33 year-old uremic man who had flank pain and back pain for days. The initial X-ray finding is easily mistaken as a condition of emphysematous pyelonephritis. After prudent physical examination and computed tomography image study we proved a fatal necrotizing fasciitis attacked him. Although aggressive treatment, he was expired 71 days after admission. Necrotizing fasciitis is a life-threatening condition and is difficult to detect in **its** early stages, but it rapidly progress. It is relatively seldom seen in the back or trunk than peripheral sites such as this case we presented here, except in neonates or little children. Patients require aggressive debridement and management to overcome the associated high morbidity and mortality.

Keywords: Necrotizing Fasciitis, Emphysematous pyelonephritis, Back, Mortality, Uremia.

INTRODUCTION

Necrotizing fasciitis is a life-threatening condition with a high mortality rate reaching 70~80%. These infections can be difficult to detect in their early stages, but they rapidly progress. The majority of necrotizing fasciitis are involved in the peripheral sites accounting for 86% cases [1]. Non-survivors are older in age than survivors. It is seldom seen in the back or trunk such as this case we presented here unless in neonates or little children. The pathogens are often mixed and gas-forming. Diabetes is the most commonly seen co-morbid disease. Mortalities are related to a higher leukocyte count, blood urea nitrogen, creatinine, potassium, partial thrombo-plastin time, aspartate aminotransferase, and lower pH, bicarbonate [2]. Patients require aggressive debridement and management to overcome the associated high morbidity and mortality.

CASE REPORT

A thirty-three year-old man presented to our emergency department (ED) with severe flank and back pain for 2 days. He had chronic renal failure with hemodialysis therapy three times a week. Upon arrival of ED, the vital signs were as follow: body temperature: 37.2 ℃; heartbeat: 87 times per minute; respiratory rate: 18 times per minute and blood pressure (BP): 107/57. He looked lethargy and blood tests were white blood cell (WBC) count: 20500/μL; band 2%, neutrophil 91%; C-reactive protein (CRP): 37.3 mg/dL, blood urea nitrogen (BUN): 54 mg/dL, and creatinine 3.7 mg/dL. Urine routine examination revealed mild pyuria with 19 WBC in high power field (HPF). The plain abdomen film (Figure-1) showed multiple small bubbles over the right kidney and peri-renal space. The initial impression was emphysematous pyelonephritis (EPN). Flomoxef 1 gram and Metronidazole 500 mg were administrated after two sets of blood cultures collected. Half a day of observation at ED, BP dropped and shortness of breath developed to him. We arranged computed tomography (CT) of abdomen immediately and some interstitial free air in the right side back of trunk were seen (Figure-2). Fulminant necrotizing fasciitis was the true diagnosis behind the scenes. Six days after arrival of ED, *enterococcus faecalis* and *bacteroides fragilis* were isolated from two sets of blood cultures. At the day 9 of admission, surgical debridement was performed, and pus culture grew Pseudomonas aeruginosa, Acinetobacter baumannii complex and Enterococcus species. He was expired owing to multiple organ failure (MOF) 71 days after admission.

Figure 1. There are multiple air bubbles in the right side kidney and per-renal space (small white arrows). Emphysematous pyelonephritis (EPN) was initially impressed.

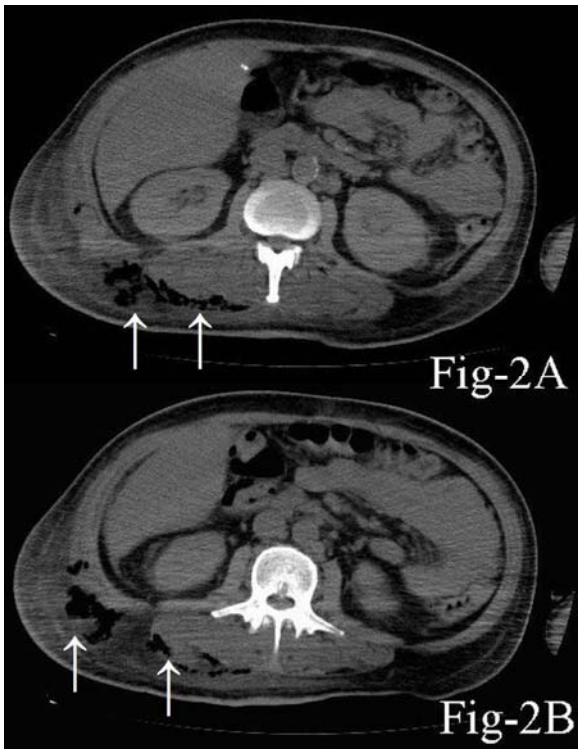

Figure 2. Abdominal computed tomography showed interstitial free air (white arrow keys) in the right side back of trunk. We found the necrotizing fasciitis was the diagnosis behind the scenes.

DISCUSSION

Necrotizing fasciitis is a rapidly progressive, spreading, gas-forming infection with secondary necrosis of the subcutaneous tissues. Necrotizing fasciitis moves along the deep fascial plane. Males are more commonly affected than female. The mean age from a sixteen-year experience of southeast Taiwan is 58.2 years old, and this is older than the report from other country [3]. The causes of necrotizing fasciitis including operative wounds, trauma site, wounds of intravenous injection, intramuscular injection, insects bites, and idiopathic. The causative bacteria may be aerobic, anaerobic, or mixed flora, and the expected clinical course varies from patient to patient. Some cases of necrotizing fasciitis can be caused by *Vibrio vulnificus*. This organism is seen more often in patients with liver cirrhosis, and it often follows the infected wound associated with seafood. *V vulnificus* may cause subcutaneous bleeding and blister formation. The immuno-suppressed, diabetes, and alcoholics are sensitive to become infected by necrotizing fasciitis. It could happen to any region of the body, the abdominal walls, perineum, and extremities are more common. In our case, back is relative rare site occurring necrotizing fasciitis. Necrotizing fasciitis is highly fatal unless aggressive and prompt treatment [4]. Diagnosis of necrotizing fasciitis can be difficult and requires a high degree of suspicion. The initial plain film of abdomen showed the multiple small bubbles shadows over the right kidney contour easily mistaken an emphysematous pyelonephritis. We also watched out the true diagnosis behind the scenes in X-ray interpretation by inspection and palpation of skin and subcutaneous tissue. These infections can be difficult to recognize in their early stages, but they rapidly progress. The aim of surgical debridement is to remove all infected tissue in a single operation. This ceases the progression of the fasciitis and minimizes unnecessary returns to the operating room [5]. Mortalities are related to a higher leukocyte count, blood urea nitrogen, creatinine, potassium, partial thromboplastin time (PTT), aspartate aminotransferase, and lower pH, bicarbonate of arterial blood gas studies [2]. Mortality rate is around 9.3%~17% [1, 2]. Patients require aggressive treatment to combat the associated high morbidity and mortality. Funding: none. Conflict of Interest: none. Ethical approval: not required.

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