NECROTIZING FASCIITIS WITH GANGRENE OF BOTH FEET AND LEGS IN A DIABETIC PATIENT - A CASE REPORT

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Abstract:

Necrotizing fasciitis is an insidiously advancing soft tissue infection characterized by widespread fascial necrosis. It is rare and is a life threatening infection. Necrotizing fasciitis has a very high mortality rate. It commonly occurs at abdomen, perineum, scrotum and extremities. It requires prompt diagnosis and urgent treatment with radical debridement and higher antibiotics. We report a rare case of necrotizing fasciitis involving both lower limbs along with gangrene of both feet.

Key words: necrotizing fasciitis, gangrene, Diabetes Mellitus

Introduction

Necrotizing fasciitis is perhaps the most severe form of soft tissue infection primarily involving the superficial fascia. This disease has bewildered physicians for centuries. Wilson first introduced the term necrotizing fasciitis in 1952. The reported mortality rates for necrotizing fasciitis ranges from 6% to 76%. A delay in diagnosis and consequently delayed operative debridement has been shown in multiple studies to increase mortality. Thus a high index of suspicion is required to diagnose this condition. Success in avoiding a fatal outcome depends on prompt and radical debridement.

Necrotizing fasciitis is commonly classified into type1 (polymicrobial) and type2 (group A streptococcal). The causative bacteria may be aerobic, anaerobic or mixed flora. The most common site for development of necrotizing fasciitis is abdomen, perineum, scrotum and lower extremities. It is common in immunocompromised conditions related to diabetes mellitus, malnutrition and HIV infection.

In most cases, necrotizing fasciitis occurs as a result of entry of bacteria through some precipitating event like a cut, contusion, burn, or even an operative incision. In certain cases, the known etiologic factor is identifiable.

We report a case of an elderly diabetic patient who developed necrotizing fasciitis of the lower limbs along with bilateral gangrene of the foot due to mechanical- thermal burns. This rare condition of bilateral necrotizing fasciitis along with bilateral gangrene has not yet been reported in the literature.
A 62 year old male with a 7 year duration of type 2 diabetes and hypertension presented to our casualty department with history of pain, swelling, and discoloration of both feet of one-week duration. The patient initially had pain in the lower limb with swelling. In order to relieve the pain, he dipped his both lower limbs in warm water for approximately 15 minutes followed by oil massaging. On the next day, he noticed reddish discoloration of both feet and legs with blackish discoloration of all toes. He was rushed to a nearby hospital that later referred the case to our institute for further management.

On physical examination, the patient was conscious and oriented. His pulse rate was 84/minute, blood pressure was 130/90 mm Hg, respiratory rate was 20/min and temperature was normal.

On local examination, both his feet and legs were swollen and had multiple blebs (Fig 1 and 2).

There was local warmth with erythema. There was blackish discoloration of all the toes and both feet. His dorsalis pedis and posterior tibial arterial pulses were well palpable on both sides. The respiratory system and cardiovascular system examination were normal. His laboratory investigations are listed in Table 1. The only significant finding was elevated Serum Creatine kinase.

A diagnosis of bilateral lower limb necrotizing fasciitis was made. We also, however, took the opinion of our dermatologist and vascular surgeon who advised additional work up for vasculitis and Doppler study of lower limb and abdomen. Both the investigations were also normal (Table 2).

The patient was started on empirical intravenous antibiotics consisting of Piperacillin-Tazobactam, Clindamycin and linezolid as per our protocol. Fortunately, the patient did not have septicemia.
Since the patient was unwilling for any level of amputation, debridement of the wound was done and he was subsequently discharged from the hospital (Fig 3 and 4).

Upon regular follow up at our outpatient department we found that the larger wound was granulating well. After three months from the initial debridement we noted that all the toes exhibited dry gangrene (Fig 5).

The patient subsequently consented to further debridement and bilateral midfoot amputation (Fig 6). Postoperatively, the ulcers were healing well. Due to financial constraints, the patient was discharged with recommendation made for the need of a split skin grafting in the future.
Discussion

Necrotizing fasciitis is a rapidly spreading infection involving skin, superficial fascia and subcutaneous fat. In our institute we frequently encounter necrotizing fasciitis, about one case every week. However, this case posed a unique challenge to us in management and we were successful in salvaging his limbs. We attribute the cause of this rare presentation of necrotizing fasciitis and bilateral forefoot gangrene to the fact that patient had developed thermal burns and mechanical injury resulting from dipping of the foot in the hot water and subsequent massaging.

The practices of barefoot walking, dipping the foot in hot water and also massaging the leg for pain relief, are very common practices in India. It leads to a breach in the skin and entry of the microorganism(s), which results in necrosis of superficial fascia and subcutaneous tissue containing blood vessels and nerves.

Inflammation induces venous microthrombosis, arterial vasculitis, local hemorrhage and secondary skin infarctions. Infection can spread to underlying muscles resulting in myonecrosis. Blister or bullae formation can also commonly occur. Creatinine Phospokinase (CPK) concentration is a useful marker of muscle necrosis. This patient had a very high serum creatine kinase levels (1074.5 U/L).

The presented case highlights the consequences of improper methods of pain relief as mentioned above. Such practices should be condemned, as they could be limb threatening and life threatening especially in diabetic patients. Necrotizing fasciitis is rightly described as a “flesh eating” bacterial disease. This case of necrotizing fasciitis of both lower limbs along with bilateral gangrene of the forefoot is extremely rare and to our knowledge has not yet been reported.

References


