Necrotizing Fasciitis: An Aid to Prompt Diagnosis

To the Editor:

The Confederate Army surgeon Joseph Jones first described necrotizing fasciitis in 1871. Other names used for this condition have included necrotizing erysipelas, hemolytic streptococcal gangrene, nonclostridial crepitant cellulitis, nonclostridial gas gangrene, synergistic necrotizing cellulitis, bacterial synergistic gangrene, necrotizing cellulitis, and gangrenous erysipelas. When it involves the perineum and scrotum, it is referred to as Fournier’s gangrene, first described by Alfred Jean Fournier in 1843.

The US Centers for Disease Control and Prevention (CDC) estimates that 10,000 to 15,000 cases of invasive Group A streptococcus occur annually, of which 5% to 10% are necrotizing fasciitis. The disease is more prevalent in adults but has been reported in children. Early manifestations include erythema with spreading edema, crepitus, and vesicles. Late manifestations may include cutaneous anesthesia, dermal gangrene, coagulopathy, and cellulitis refractory to antibiotics. Other criteria have been proposed to aid in the clinical diagnosis, including a white blood cell count (WBC) higher than 15.4 to 109/L and serum sodium less than 135 mmol/L at hospital admission. Streptococcal toxic shock syndrome with group A streptococcus occur may in patients with necrotizing fasciitis, with an associated mortality of 30% to 60% in the first 72 to 96 hours. A streptococcal toxic shock–like syndrome with necrotizing fasciitis has also been associated with group B streptococcus. Some investigators have suggested an immunogenic basis for different outcomes of invasive streptococcal infections.

Necrotizing soft-tissue infections such as necrotizing fasciitis and Fournier’s gangrene are associated with a significant incidence of patient morbidity and mortality. Traditionally, these patients have been treated by surgeons in the community. Rapid diagnosis is essential to successful treatment; a late diagnosis minimizes the likelihood of recovery.

The A-B-C-D-E mnemonic of the Advanced Trauma Life Support course provides an easy and convenient key for summarizing the relevant clinical features and diagnostic criteria, as follows:

A – Anaerobic, Aerobic, Adult, Antibiotics refractory
B – Bacterial synergistic gangrene, group B streptococcus, and Blood count higher than normal
C – Cellulitis, Crepitus, and Coagulopathy
D – Dermal gangrene, Delay in presentation almost fatal
E – Erythema with spreading Edema

Use of this simple mnemonic for diagnosis of necrotizing fasciitis rather than awaiting the results of invasive investigation, such as frozen section biopsy, culture swab report, computed tomography scan, or magnetic resonance imaging, can aid in providing the prompt treatment of the fasciitis that is imperative for saving the patient’s life in these cases.

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References

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