Emergence of Non–Group A Streptococcal Necrotizing Diabetic Foot Infections

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Recently the authors have noted a disturbing trend toward an increased incidence of necrotizing infections caused by non–group A streptococcal species. This article describes the typical clinical course of such an infection. Prompt surgical intervention, coupled with an antibiotic regimen aimed at mitigating exotoxin release, may be both limb- and life-preserving. (J Am Podiatr Med Assoc 88(6): 305-307, 1998)

Case Report
A 42-year-old Hispanic man with a 4-year history of type 2 diabetes mellitus presented to the emergency room complaining of a painful, swollen, gangrenous fourth toe (Fig. 1). He reported that 2 weeks previously he had been using a blowtorch and accidentally burned the tip of his fourth toe. During that 2-week period, the end of his toe became black and continued to be painful and swollen. The patient’s diabetes was well controlled by an oral hypoglycemic agent.

The physical examination revealed palpable dorsalis pedis and posterior tibial pulses with brisk capillary filling time to toes 1, 2, 3, and 5. The fourth digit was edematous and had wet gangrene from the tip of the toe to the level of the middle phalanx. Cellulitis extended just proximal to the metatarsophalangeal joint, and his white blood cell count was 15,000/mm³. Plain radiographs were not consistent with osteomyelitis or soft-tissue emphysema.

The patient was subsequently taken to the operat-
ing room, where he underwent a distal partial fourth-ray amputation. He was placed on broad-spectrum intravenous antibiotic therapy with daily wound care. Over the next 48 to 72 hours, purplish, nonblanching erythema was noted to be spreading to the level of the ankle joint anterolaterally (Fig. 2). Owing to the rapidly spreading cellulitis, the patient returned to the operating room and underwent another debridement procedure, which yielded significant findings of a thrombosed dorsal venous arch and abundant hemorrhagic tissue involving the skin and the superficial and deep fascia (Figs. 3 and 4). Tissue from both

Figure 1. Appearance of thermal injury on initial presentation.

Figure 2. Appearance 48 hours after partial fourth-ray amputation. Note the extensive advancing ecchymosis and rubor.

Figure 3. Intraoperative view showing extensive necrotizing infection.

Figure 4. Intraoperative view showing hemorrhagic tissue with thrombosis of vessels within the superficial fascia.
procedures was positive for group B β-hemolytic streptococci. After the final culture results were obtained, the broad-spectrum antibiotic was switched to penicillin and clindamycin. Ten days after being admitted to the hospital, the patient was discharged home on a regimen of daily wound care and oral antibiotics. Three months have passed since his partial fourth-ray amputation with a split-thickness skin graft (Figs. 5 and 6). He was able to return to work as a truck driver with a new pair of depth-inlay shoes.

Discussion

This case is one of many non–group A streptococcal necrotizing infections encountered at the authors’ institution over the last 6 months, illustrating a disturbing trend. The aggressive nature of some group B β-hemolytic streptococci in diabetic foot infections is an issue that has received scant attention in the medical literature. Recently, however, three cases of group B streptococcal necrotizing fasciitis were noted in Canada. The authors believe that their recent experience with non–group A streptococcal infections and their aggressive nature mandate further investigation.

References