

Treatment of Diabetic Foot Ulcers With Necrotizing Fasciitis in the Lower Leg Using the STAGE Principles: A Report of 9 Cases With a Literature Review

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Abstract

Diabetic foot ulcers (DFUs) combined with necrotizing fasciitis (NF) has rapid onset, involves a wide range of lesions, is difficult to treat, and has a high mortality rate. It has become a clinically critical disease. DFU patients are at high risk for NF. The STAGE principles guide surgical intervention in the treatment of DFU wounds and emphasizes that “based on anatomical layers, the management focuses on blood supply and includes layer-by-layer incision to the infected area, maintenance of effective wound drainage, and step-by-step treatment of the wound.” This work reports the application of the STAGE principles for the treatment of 9 cases of DFUs combined with NF in the lower leg (Wagner grade 3-5). The mean ankle-brachial index was 0.55 (0-0.91, standard deviation [SD] = 0.33), the mean years of smoking were 19.56 years (0-50, SD = 17.83), and the mean cigarette consumption was 9.11 cigarettes/day (0-20, SD = 7.77). The mean duration of ulcers was 45.56 days (3-103, SD = 35.44). Among the 9 patients, only patient no. 9 died, and the mean follow-up time for the other 8 patients was 12 months (3-36, SD = 13.42). In short, the STAGE principles are also applicable to the treatment of DFUs combined with NF in the lower leg.

Keywords

STAGE principles, diabetic foot ulcers, necrotizing fasciitis, literature review

Introduction

Diabetic foot ulcers (DFUs) are serious complications of diabetes. Diabetic patients have a 15% to 25% chance of developing foot ulcers in their lifetime.¹ Neuropathy and poor blood circulation caused by hyperglycemia increase the probability of necrotizing fasciitis (NF) in the legs.² NF is a serious, rapidly progressive, and critical soft tissue infectious disease that is characterized by progressive necrosis involving deep, superficial fascia, and subcutaneous tissue.³ The STAGE principles guide surgical intervention for the treatment of DFUs. Based on clinical observation, we propose that the STAGE principles are applicable to DFUs with NF in the lower leg. In this case report, we report the application of the STAGE principles for the treatment of 9 cases of DFU combined with NF in the lower leg, in addition to a literature review.

Materials and Methods

Study Design and Population

In China, the incidence of DFUs combined with NF is not high in clinical practice, but it progresses rapidly with a poor

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