How and Why to Surgically Debride Neuropathic Diabetic Foot Wounds

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Wound debridement, when systematically performed, may be as important as off-loading in reducing the prevalence of chronic inflammatory by-products in a wound and thus in converting a chronic wound into an acute one. Although it has been suggested that aggressive surgical debridement of wounds may be beneficial, there have been few, if any, technical descriptions of this aspect of therapy. It is therefore the purpose of this article to describe the general principles, process, and technique of outpatient surgical debridement of noninfected, nonischemic neuropathic diabetic foot wounds performed at the authors’ institutions. The authors hope to foster further discussion leading to improvement in the process and the prevalence of such debridement. (J Am Podiatr Med Assoc 92(7): 402-404, 2002)
products in a wound and thus in converting a chronic wound into an acute one. Steed et al., in an important post hoc analysis of patients enrolled in a randomized controlled trial of becaplermin, reported that significantly more patients healed in medical centers that debrided wounds more frequently. In an excellent review, Attinger et al. detailed debridement techniques for a variety of tissues of the lower extremity without specifically focusing on the mechanics of diabetic foot wounds. Although it has been suggested that aggressive surgical debridement of these wounds may be beneficial, there have been few, if any, technical descriptions of this aspect of therapy. The 1999 American Diabetes Association Consensus Development Conference on Diabetic Foot Wound Care revealed that a variety of surgical techniques are used worldwide, with apparently no specific documentation of these techniques in the literature. Therefore, this article describes the general principles, process, and technique of outpatient surgical debridement of noninfected, nonischemic neuropathic diabetic foot wounds performed at the authors’ institutions. The authors hope that this article will foster further discussion leading to improvement in the process and the prevalence of such debridement.

**Technique**

With the patient seated comfortably, the wound may be approached with either a sterile scalpel and forceps (Fig. 1) or, for smaller wounds, a tissue nipper (Fig. 2). The skin may be incised, or the nipper may be introduced to the fullest extent of the undermining between the epidermis and the dermis (the extent of damage caused by shear stress). Excision of this undermined tissue should be performed circumferentially about the wound until the periphery exhibits a firm connection between the epidermis and the dermis. Any nonviable tissue should be removed centrally from the wound, as required, through sharp excision or curettage. Digital pressure may then be applied to the wound to achieve hemostasis. The wound may then be probed to assess involvement of underlying tissue and for the presence of occult infection. One may then dress and off-load the wound in an appropriate fashion. The hallmark of an appro-

![Figure 1 A-D. Surgical debridement of a plantar diabetic foot wound using a scalpel and forceps.](image-url)
Figure 2 A–D. Surgical debridement of a plantar diabetic foot wound using a tissue nipper.

appropriately off-loaded wound is the noticeable lack of undermining at the wound’s edge at follow-up.

Conclusion

The authors have presented techniques for debriding neuropathic diabetic foot wounds, the most commonly encountered wounds in diabetic foot practice. With appropriate attention to these principles, as well as to off-loading and selection of modalities to optimize the wound-healing environment, one may experience more consistent results in terms of healing and, ultimately, amputation prevention.

References