

# Grand Round:

## Diabetic Ulcer of the Lower Extremity

### Extent of the problem:

Foot ulcerations are one of the most common complications affecting patients with diabetes mellitus. One in four diabetic individuals will develop a lower extremity ulceration, most commonly in the mid to later stages of life. Roughly 85% of lower limb amputations in this patient population are preceded by an unhealed ulceration. It's estimated that nearly 80,000 lower extremity amputations are performed each year in the United States on diabetic individuals, with an associated two-year treatment cost of more than \$90,000 per person. Of much greater significance: the 5-year mortality after amputation for this group has been reported at nearly 45%. Recent literature suggests that if more attention is provided to foot care in this high risk patient population, serious complications and even death can be prevented. The Wound Care Center® has a thorough approach to evaluating and managing these difficult diabetic foot wounds. Healing is achieved in cooperation with referring physicians, surgeons, podiatrists and patients.



### Causes of the problem:

Peripheral neuropathy and minor trauma are critical factors which lead to foot and leg wounds in patients with diabetes. Once an injury occurs, the faulty healing in patients with diabetes can lead to a chronic wound. Ischemia (tissue hypoxia) and infection play major roles in healing failure. Low periwound tissue oxygen levels are uniformly associated with initial wound healing failure and increased infection risk.

### Treatment of the problem:

Many authors have demonstrated the importance of providing an aggressive multidisciplinary approach to the management of patients with diabetic wounds. Frequently the total care required for optimal outcome exceeds the resources which any single physician can provide. The Comprehensive Wound Care Center provides a multidisciplinary approach to care and offers certain unique resources for patient evaluation and treatment

- ▶ Since periwound tissue hypoxia has been shown to be an important determinant of wound healing in diabetic patients, the Comprehensive Wound Care Center can perform transcutaneous oxygen measurements when necessary. Patients with demonstrated tissue hypoxia and an abnormal pulse examination receive further peripheral vascular evaluation and possible surgical intervention.
- ▶ Adjunctive hyperbaric oxygen treatment (HBOT) can be an important aspect of the treatment armamentarium as well. This therapy, recommended in the American Diabetes Association treatment guidelines, also improves the host response to local soft tissue and bone infection.
- ▶ Aggressive wound debridement is a mainstay in diabetic foot wound treatment. Initial surgical debridement, tissue cultures, and regular follow-up provide the best opportunity for healing.

