

## Summary

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Foot ulcers are a major cause of morbidity and cost in the diabetic population. Therefore, prevention should be of paramount importance. If an ulcer develops, then treatment must be initiated at the earliest possible stage and implemented with a comprehensive understanding of the risk factors that preceded its development.

Patients with diabetes require surgery more frequently than nondiabetic patients because of the multitude of complications associated with their disease. Preoperative preparation of these patients involves optimization of blood glucose levels to ensure energy throughout the procedure. Furthermore, cardiovascular risks must be properly assessed to minimize the risk of morbidity and mortality during surgery. Ideally, surgical patients with diabetes mellitus will be properly prepared in advance, so that their risks can be minimized. Surgery in this population of patients can become a difficult balancing act because of the need for glycemic control. In addition, the surgeon must keep in mind that getting the patient through surgery is just the beginning because of the persistent nature of diminished wound healing, increased risk of infection, and prolonged tissue catabolism following surgery. With careful planning and perioperative monitoring, it is possible to reduce the risks associated with diabetic patients requiring surgery.

When properly performed, skin grafting of diabetic foot and ankle wounds represent simple, reliable, minimally invasive, and cost-effective techniques useful in the surgical management of diabetic wounds involving patients with well-controlled medical comorbidities.

Further protection of the soft tissue wound coverage site through the use of proper in-shoe orthoses and shoe gear is essential and should be frequently monitored to avoid or at least minimize late return of the wound.

Local flap reconstruction of pedal defects can be accomplished with a variety of techniques. Multiple geometric constructs have been described for closure of foot defects. Each has its own unique principles that can be adapted to certain locations and premorbid conditions. Local flaps considered for closure of foot defects should lie within the higher level of any algorithm, because of their versatility, reproducibility, and long-term functional outcomes. In addition, hospitalization, length of anesthesia, and perioperative care can be much less with the use of local flaps.

Local intrinsic muscle flaps of the foot are advantageous in covering full-thickness soft tissue defects among the diabetic foot and ankle, especially when there is exposed hardware, bone, joint capsule, and/or tendon. In addition, muscle flaps are particularly useful in the surgical treatment of osteomyelitis. In case scenarios in which diabetic foot or ankle wounds are further complicated with osteomyelitis, the use of a muscle flap can be advantageous in that it provides increased local blood flow to the area, thereby enhancing the deliverance of antibiotics and white blood cells, and facilitating the healing process. Muscle flaps can be harvested to include the cutaneous portion supplied by the musculocutaneous perforating vessels; however, in the diabetic foot this is often difficult, and muscle flaps are often harvested in isolation followed by coverage with a split-thickness skin graft. The most used local intrinsic muscle flaps for soft tissue coverage of the diabetic foot

is the abductor hallucis, extensor digitorum brevis, flexor digitorum brevis, and abductor digiti minimi. Muscle flaps that contain a dominant vascular pedicle and several more distal minor pedicles allow for easy mobilization, rotation, and various modifications to achieve soft tissue coverage about the foot and ankle. Muscle flaps have proved to be a powerful procedure in the surgeon's armamentarium to obtain durable soft tissue coverage in difficult to heal diabetic foot and ankle wounds.

## Conclusion

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It is concluded that management of a patient with diabetic foot requires comprehensive preoperative and perioperative preparation. Reconstruction of diabetic foot ulcers ranges from skin graft to vascular pedicle muscle flaps. Reconstruction of Diabetic Foot Ulcers will improve the quality of care and patient outcomes by providing a comprehensive stepwise approach for managing even the most complicated diabetic patients.