

## The Many Uses of Minimally Invasive Foot Surgery



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There are approximately 65,000 amputations performed in the United States each year with 82% occurring due to a vascular disease. 80% of these amputations occur on people over the age of 50 and 77% are males, according to the American Diabetes Association in 2012. 29.1 million Americans, or 9.3 % of the population, have diabetes, and diabetes remains the 7th leading cause of death in the United States, according to 2010 statistics.

One of the great rewards of any podiatric practice is our ability to heal and prevent recurrence of ulcers and possibly prevent life-changing losses of limb in diabetic geriatric patients. Since the majority of these lesions not associated with trauma occur over bony prominences, the dilemma has always been how to affect a permanent cure without endangering the vascular compromised patient. Traditional conservative treatment usually includes extended periods of offloading, often with cumbersome devices which affect daily activities. Recent studies have shown that patient non-compliance often plays a major factor in delayed healing and often contributes to an ultimate negative outcome. Even if healing is obtained, the patient might be required to continue wearing special shoes or uncomfortable off-loading devices permanently.

Minimally Invasive Surgery (MIS) can be a valuable tool in the surgical treatment of geriatrics with the goal of obtaining permanent offloading and ultimately permanent cures. Many of these patients are at risk of losing limbs due to ulcers, etc. and are poor candidates for traditional surgery. With the minimal disruption of blood supply, and of course with proper medical clearance, MIS, which may include removal of ulcer-causing bony prominences and pressure relieving osteotomies, in the majority of these cases, may safely be performed. This permanent offloading can turn months and even years of healing times into weeks while allowing patients to return to a normal lifestyle

The following three cases illustrate how MIS can be performed on patients who might otherwise not be candidates for more invasive procedures.

**Case #1** (Figures 1 and 2) is a 94 year old active woman, who due to repeated ulcerations on the 1st and 2nd digits had previously



Figure 1

Figure 2

been scheduled for hallux and 2nd toe amputations on two separate occasions prior to being seen. Instead, an MIS spur excision of the hallux, a hallux proximal phalangeal osteotomy and an osteotomy of the 2nd toe was performed under local anesthesia in an ASC. The patient was ambulatory leaving the office and returned to hand dancing and bowling in four weeks for the first time in over two years.

**Case #2** (Figures 3-5) is an 82 year old diabetic who was referred for an amputation of the 4th toe with a two-year history of a recurrent inter-digital soft corn/ulcer of the 4th toe. Due to her unstable diabetes, she was not a candidate for surgery at the time of referral. Over a 6-week period, while the patient was being stabilized medically, appropriate wound care was given and after a risk vs. reward discussion with the family, rather than an amputation, an MIS spur excision was performed on the 4th and 5th toes. The patient went onto healing and is 3 years post op at this time without a recurrence of the ulcer or the need for an amputation.



Figure 3

Figure 4

Figure 5

**Case #3** (Figures 6-8) is an 85 year old diabetic, a former ballroom dance instructor, who had been unable to comfortably wear shoes for several years following previous hallux valgus and hammertoe procedures. The deformities led to a recurrent ulcer on the 2nd toe. Procedures included a medial approach MIS osteotomy of the hallux, an osteotomy of the 2nd toe and a Haspel procedure of the 2nd metatarsal via MIS plantar incisions to better align the proximal phalanx with the metatarsal. Following the procedure, the patient was able to return to normal shoe gear and resume teaching.

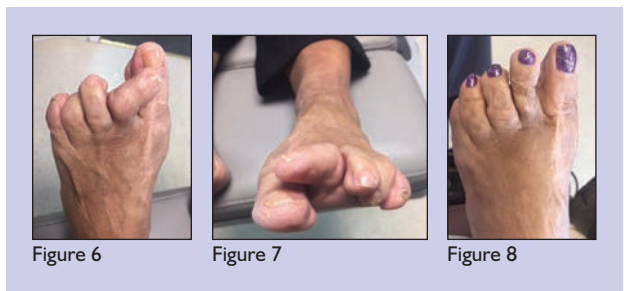


Figure 6

Figure 7

Figure 8

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## Foot Surgery (continued)

Another benefit of MIS, as also seen in the previous cases, is the ability to perform revisional surgery without the need for further invasive procedures which may involve removal and reinsertion of hardware. A small incision can be made either proximal or distal to the hardware and an optimal correction can often be obtained. **Cases #4** (Figures 9-11) and **#5** (Figures 12-14) demonstrate revisional MIS surgery that was performed on two patients where less than optimal results were obtained via traditional surgery and symptoms still existed. Hardware was present in both cases yet left in and

avoided with the MIS surgical procedures.

In conclusion, minimal invasive surgery, among its many uses and benefits for our regular surgical patients, can be a valuable, safer, and less invasive alternative to consider for permanently alleviating conditions in patients who might otherwise not be optimal candidates for traditional surgery and patients not desiring additional extended periods of disability.



Figure 9



Figure 10



Figure 11



Figure 12

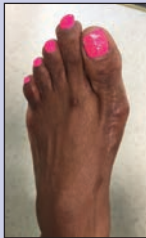


Figure 13



Figure 14

Dr. Katzen is a 1971 graduate of TUSPM, a Fellow of the **Academy of Ambulatory Foot and Ankle Surgery**, and an AAFAS lab instructor at L.S.U. Medical School. He is President, Temple School of Podiatric Medicine Alumni Board of Directors.

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