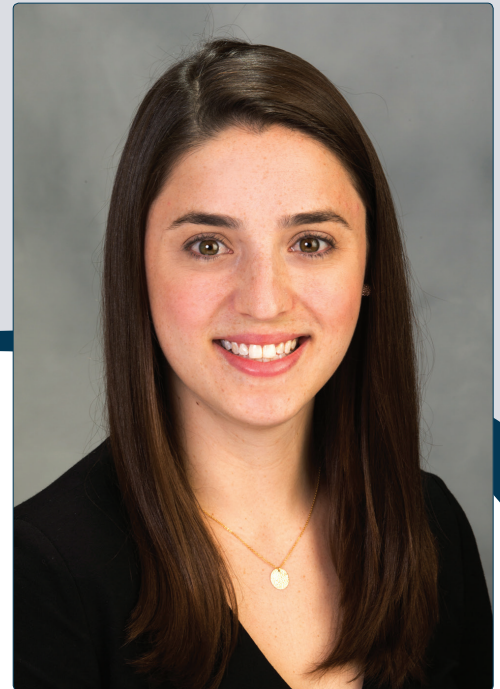




HYPERBARIC  
MEDICAL SERVICES

Wound Care & Dive Medicine



## DR. NICOLE K. CATES DPM, AACFAS

Dr. Nicole Cates is a fellowship-trained foot and ankle surgeon with years of training dedicated to foot and ankle pathology. Dr. Cates completed her surgical residency at Georgetown University Hospital, where she had the opportunity to train in a multi-disciplinary approach to diabetic limb salvage, in collaboration with vascular and plastic surgery, internal medicine, and physical therapy. She completed a fellowship in Limb Preservation and Deformity Correction in the Department of Orthopaedics at the University of Maryland Medical Center. There she trained further in complex foot and ankle deformity correction, Charcot Neuroarthropathy reconstruction, and external fixation.

Dr. Cates is actively involved in research and has several publications in the *Journal of Foot & Ankle Surgery* and *Podiatry Today* covering surgical outcomes in Charcot reconstruction and diabetic limb salvage, traumatology, external fixation, and innovative surgical techniques. Through her research efforts, she has developed new surgical techniques for faster wound healing by addressing the biomechanical pathophysiology. She also lectures at local, national, and international meetings and is an associate of the American College of Foot and Ankle Surgeons.

Although Dr. Cates has extensively trained in foot and ankle surgical reconstruction, she believes in customized care for each patient with the ultimate goal of returning to full activity and performing daily activities pain-free. As part of the Hyperbaric Medical Services and Wound Care Center, patients will have access to Dr. Cates, a diabetic limb salvage expert, as well as physicians trained in hyperbaric medicine, with a direct line to vascular imaging and surgical consultation, and if needed a surgery center within the medical complex. Our team is excited to treat these high-risk patients and give them the inclusive multi-disciplinary care they need!

### Publications

1. Cates NK, Elmarsafi TX, Bunka TJ, Walters ET, Akbari CM, Zarick CS, Evans KK, Steinberg JS, Attinger, CE, Kim, PJ "Peripheral Vascular Disease Diagnostic Related Outcomes in Diabetic Charcot Reconstruction" *The Journal of Foot and Ankle Surgery* Nov 2019, 58(6): 1058-1063
2. Cates NK, Pandya M, Akbari CM, Evans KK, Steinberg JS, Attinger CE, Kim PJ "Evaluation of Peripheral Perfusion in the Presence of Plantar Heel Ulcerations Status After Transmetatarsal Amputation With Achilles Tendon Lengthening" *The Journal of Foot and Ankle Surgery* August 2020, 59(5): 892-897
3. Cates NK, Wagler EC, Evans KK, Elmarsafi TX, Tefera E, Steinberg JS, Attinger CE, Kim PJ "Outcomes of Surgically Managed Charcot Neuroarthropathy Between Patients With and Without Diabetes" *The Journal of Foot and Ankle Surgery* August 2020, Article in the Press
4. Cates NK, Kavanagh A, Wynes J. "Surgical Management of Common Diabetic Foot Ulcerations: A Simplified Approach" *Podiatry Today* 2020 Aug, 32(9): 1-15
5. Cates NK, Tenley J, Cook H, Kim PK. "A Systematic Review of Angular Deformities in Charcot Neuroarthropathy" *The Journal of Foot and Ankle Surgery* October 2020, Article in the Press
6. Cates NK, Wang K, Stowers JM, Attinger CE, Kim PJ, Steinberg JS "The Vertical Contour Calcaneotomy, an Alternative Approach to Surgical Heel Ulcers: A Case Series" *The Journal of Foot and Ankle Surgery* Nov 2019, 58(6): 1067-1071

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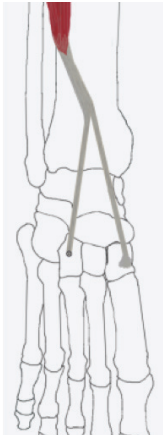
## CASE STUDIES

# AMPUTATION PREVENTION

**CASE STUDY #1** 53 y/o M with DM2 (HgA1C 11.9%), HCV+ cirrhosis, HIV/AIDs (CD4 31) with plantar 5th metatarsal base ulceration secondary to equinovarus deformity. Patient failed conservative wound care treatment including serial debridements, grafting, and total contact casting. Patient underwent split Anterior Tibial tendon transfer to restore eversion and heal the ulceration.



Equinovarus leading to sub styloid ulcer



Split Anterior Tibial Tendon Transfers



Week 1 Post Op

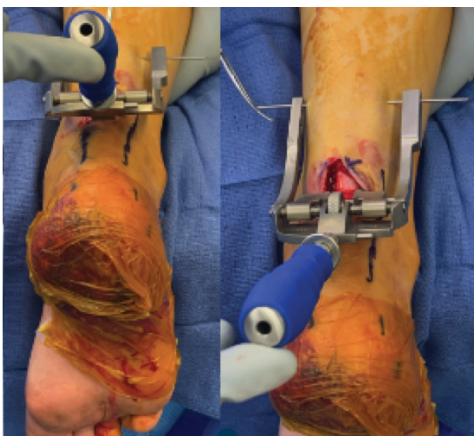


Week 4 Post Op

**CASE STUDY #2** 43 y/o M with DM2 (HbA1C 11.8%) with peripheral neuropathy, HTN, HLD, poorly controlled bipolar disorder, seizure disorder, COPD, and multiple sclerosis, with a heel ulceration secondary to calcaneal gait. Patient failed conservative wound care treatment including serial debridements, grafting, and total contact casting. Patient underwent percutaneous Achilles tendon imbrication to restore anatomic Achilles tendon strength and heal the ulceration.



Heal Ulcer secondary to Calcaneal Gait



Percutaneous Achilles Tendon Imbrication



Week 1 Post Op

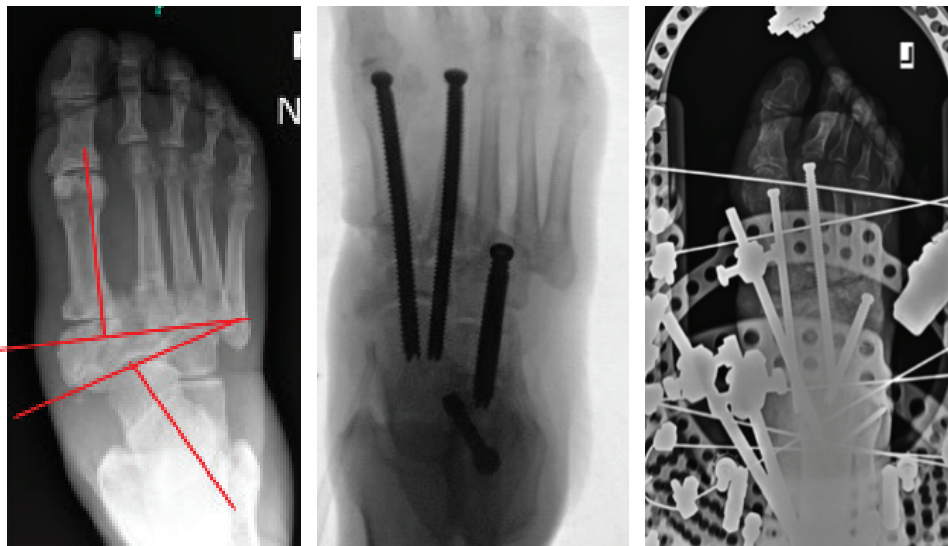


Week 4 Post Op

## CASE STUDIES

# AMPUTATION PREVENTION

**CASE STUDY #1** 58 y/o M with h/o DM2 (HgA1C 10.2), HDL, CAD s/p MI, CHF, lower extremity edema with midfoot Charcot neuroarthropathy with plantar ulceration. Patient failed conservative therapy including serial debridements, grafting, total contact casting, and subsequent exostectomy. Patient underwent Charcot reconstruction with midfoot beaming and external fixation to heal the ulceration and stabilize the deformity. Patient healed well and was subsequently fully ambulatory in a protective CROW boot.



**CASE STUDY #2** 55 y/o M with h/o DM2 (HgA1C 11.6) with peripheral neuropathy, HTN, Afib, ankylosing spondylitis, IVDA, who sustained an ankle fracture in 2017. Patient was non-compliant with weight bearing restrictions s/p ORIF and developed abscess and osteomyelitis, and subsequently ankle Charcot. The patient was treated with 6 weeks of IV antibiotics, osseous resection of necrotic bone, and surgical debridements. Once bone cultures were negative, the patient underwent a tibiototalcalcaneal arthrodesis. Surgery stabilized the deformity, and the patient returned to full ambulation. Lower extremity amputation was prevented.

