

THE VISTA APPROACH: A SURGICAL INNOVATION MODEL FOR MODERN LIMB PRESERVATION

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Introduction

Limb preservation in diabetic and neuropathic patients requires early recognition of vascular compromise, infection, and structural deformity before they progress to limb-threatening pathology. Major lower-extremity amputation carries a 5-year mortality of 40-70%, underscoring the need for proactive strategies that prevent ulcer progression and limb loss. VISTA—Vascular evaluation, Infection control, Surgical correction, Technologies/ therapies, and Amputation prevention—provides a structured pathway that identifies limb-threatening risk and guides timely intervention. This practice innovation project evaluates real-world implementation of VISTA across a 60-case surgical cohort involving forefoot, midfoot, rearfoot, and Charcot reconstruction procedures.

Methods

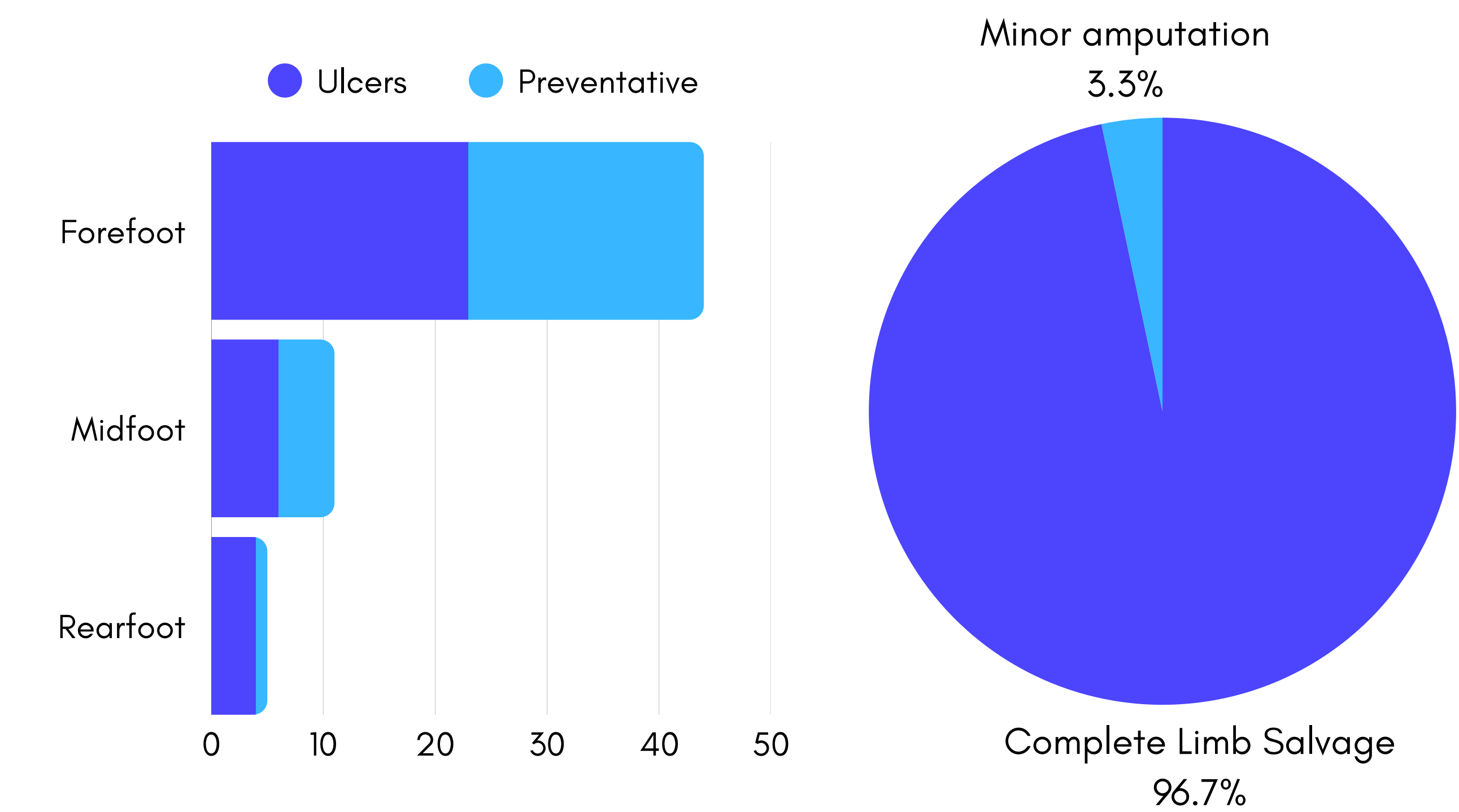
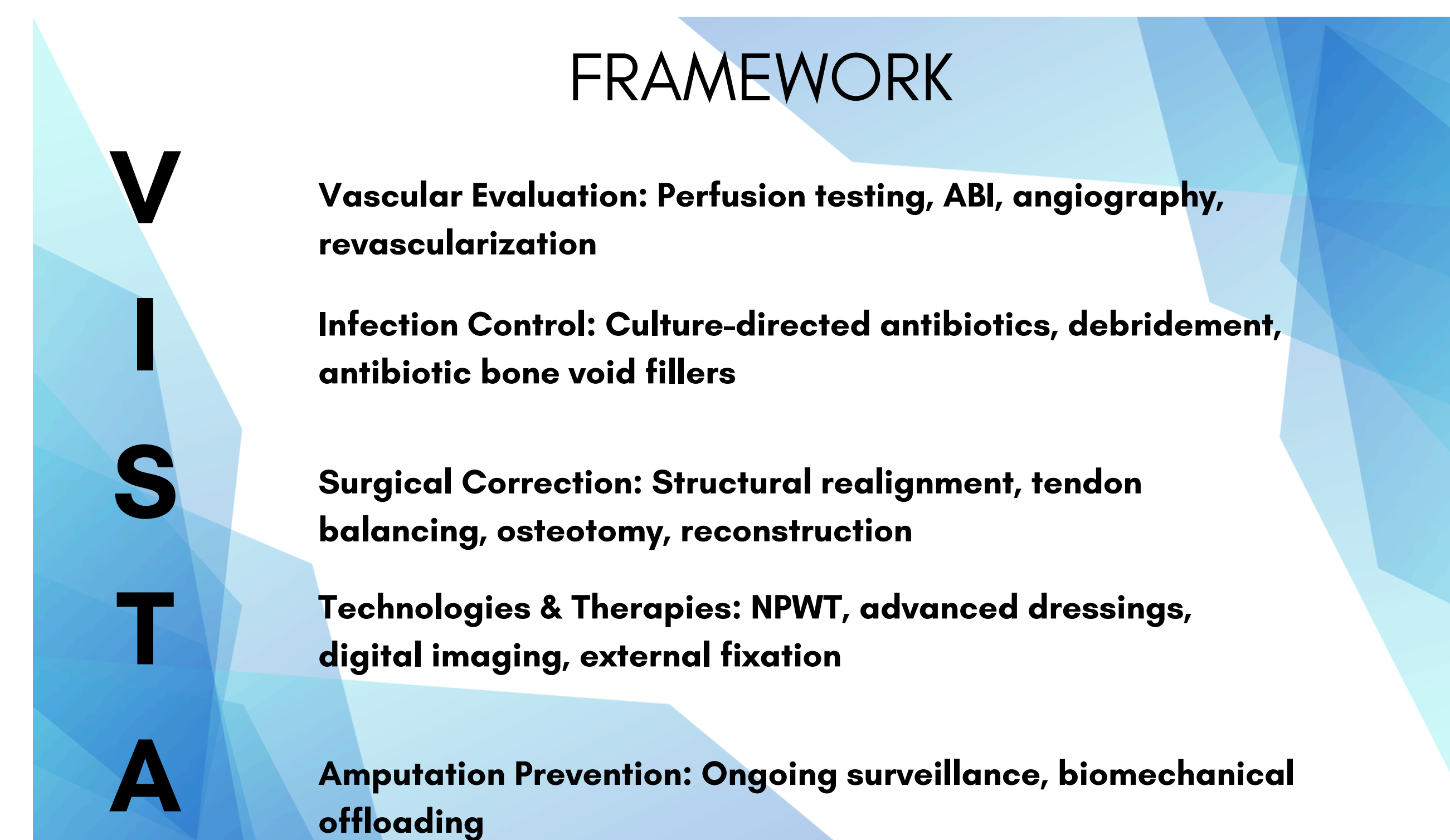
A three-year retrospective analysis was performed on 60 consecutive VISTA-guided surgical cases from 2021-2024. Vascular evaluation confirmed adequate perfusion or prompted revascularization before surgery. Infection control included culture-directed antibiotics, sharp debridement, and antibiotic bone void fillers when osteomyelitis or deep infection was present. Structural correction was performed in all cases to redistribute pathological pressure contributing to current or potential ulceration. Technologies such as negative pressure wound therapy, advanced dressings, digital imaging, and external fixation were used when indicated. Surgical categories included 44 forefoot, 11 midfoot (including 2 Charcot), and 5 rearfoot procedures, with 29 preventative surgeries, 3 preventative cases with previously healed ulcers, and 28 ulcer-presenting cases. Outcomes assessed included healing progression and limb preservation.

Results

All 60 patients underwent structural correction to address deformity and pressure overload. Limb preservation was 96.7%, with only two minor 5th-digit amputations in patients presenting with infected ulcers. Preventative surgeries maintained limb integrity by correcting deformity before breakdown occurred. In ulcer-presenting patients, structural realignment and local antibiotic delivery improved healing and reduced recurrence. Midfoot and Charcot reconstructions stabilized collapse and prevented progression toward higher-level amputation. VISTA's integrated application aligned vascular, infectious, structural, and technological factors to support durable limb function.

Discussion

Implementing the VISTA framework created a reproducible, limb-preserving pathway across varied anatomic regions. By combining early vascular assessment, aggressive infection control, precise structural correction, and targeted technologies, VISTA shifted care from reactive wound management toward proactive limb preservation. The 96.7% limb preservation rate demonstrates its impact and supports further multicenter evaluation.

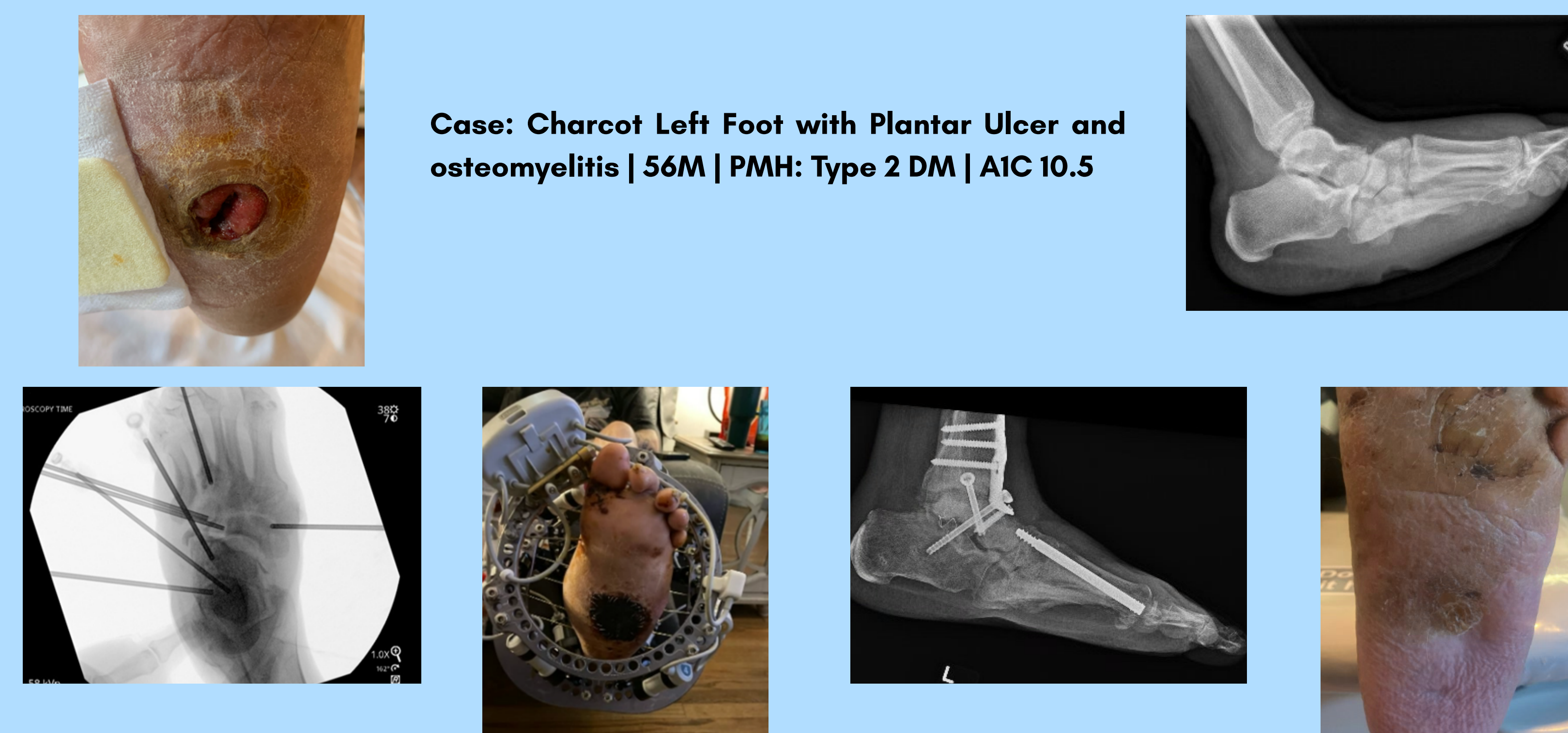


Case: Bunion Deformity with Ulceration and osteomyelitis | 47M | PMH: DM, HTN, Neuropathy, Arthritis, Anxiety | AIC 6.3



- V- Vascular**
 - Adequate perfusion for healing confirmed by ABIs
- I- Infection**
 - 5th metatarsal curettage and filled with antibiotic bone void filler in the operating room
 - Oral antibiotics started
- S- Surgical Correction**
 - Hammertoe correction (2-5)
 - Lapidus bunionectomy with first-ray stabilization
 - Endoscopic gastroc recession
- T- Technologies & Therapies**
 - Antibiotic bone void filler
 - Graft application
 - Copper dressings and multi-layer compression
 - CAM boot with period of Non-weight bearing status
- A- Amputation Prevention**
 - Complete healing and full weight-bearing at 1 year
 - Full limb preservation- patient continues with surveillance visit every 6 months

Case: Charcot Left Foot with Plantar Ulcer and osteomyelitis | 56M | PMH: Type 2 DM | AIC 10.5



- V- Vascular**
 - Adequate perfusion previously established
- I- Infection**
 - Curettage and fill with flowable gentamicin-based bone void filler injected into talus, calcaneus, and cuboid
 - IV antibiotics initiated
- S- Surgical Correction**
 - Charcot reconstruction including hammertoe correction (2,3,4), and resection of plantar bone spur.
 - Left ankle fusion once healed from initial charcot surgery and ulcer healed.
- T- Technologies & Therapies**
 - Antibiotic bone void filler
 - Dynamic external fixator
 - Graft application
 - Copper dressings and multi-layer compression
 - CAM boot with period of Non-weight bearing status
- A- Amputation Prevention**
 - Complete healing and full weight-bearing at a year and a half
 - Full limb preservation- patient continues with surveillance visit every 6 months

Case: Tunneling Great Toe Ulcer with Osteomyelitis | 66M | PMH: DM, Neuropathy | AIC 8.5



- V- Vascular**
 - Adequate perfusion previously established
- I- Infection**
 - Hospital admission with IV antibiotics
 - Distal 1st phalanx resected. Proximal phalanx and 1st metatarsal head filled with antibiotic bone void filler in the operating room
- S- Surgical Correction**
 - Hammertoe correction right digits (2-5)
- T- Technologies & Therapies**
 - Antibiotic bone void filler
 - CAM boot offloading
 - Collagen, copper, and multi-layer compression
- A- Amputation Prevention**
 - Complete healing and full weight-bearing at 4 months
 - Limb loss of only distal phalanx creating an environment for mobility preservation