Great Debates & Updates

Diabetic Foot

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Approach to Midfoot Charcot

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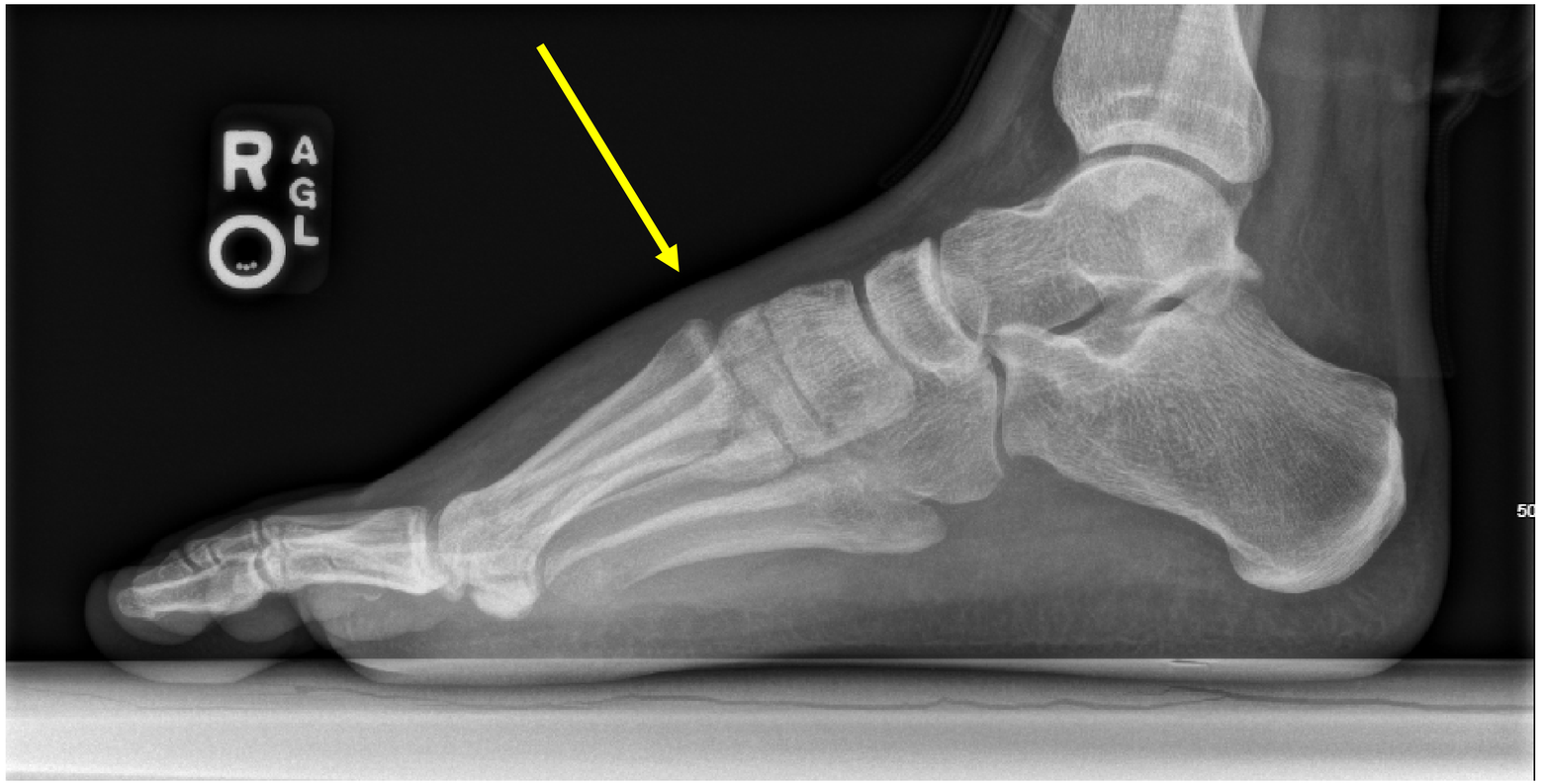
Disclosures

- **Katherine M. Raspovic, DPM FACFAS:** Consultant – Orthofix

Midfoot Charcot

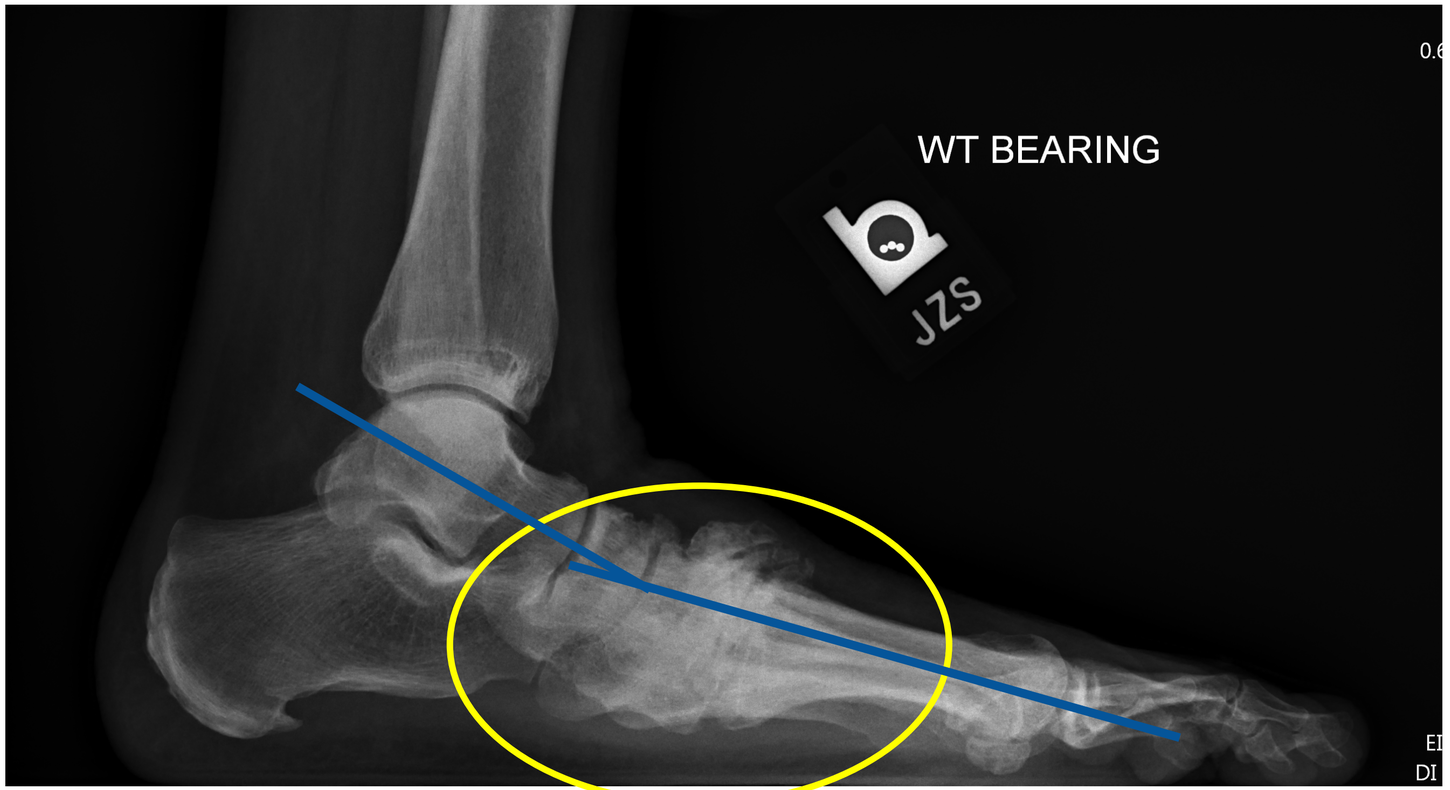
- Should we fix sooner rather than later?
- Surgical planning to optimize outcomes
- Cost of care and long term


R
A
G
L


R
A
G
L
WEIGHT


R


62kV
0.64mAs
WT BEARING
JZS
EI : 209
EIt : 200
DI : 0.19


WT BEARING
JZS

9/8/22: 49 F DM2, neuropathy, fall at home 9/4/22

11/11/22

We Need to Change Our Mindset

- Charcot = a neuropathic fracture dislocation in pathologic bone

- Where else would be treat a fracture dislocation without surgery?
  - Dane Wukich, MD

Received: 10 June 2020 | Accepted: 16 October 2020

DOI: 10.1111/dme.14438

DIABETIC Medicine

RESEARCH: COMPLICATIONS

Foot ulcer recurrence, plantar pressure and footwear adherence in people with diabetes and Charcot midfoot deformity: A cohort analysis

R. Keukenkamp[1] | T. E. Busch-Westbroek[1] | R. Barn[2] | J. Woodburn[2] | S. A. Bus[1]

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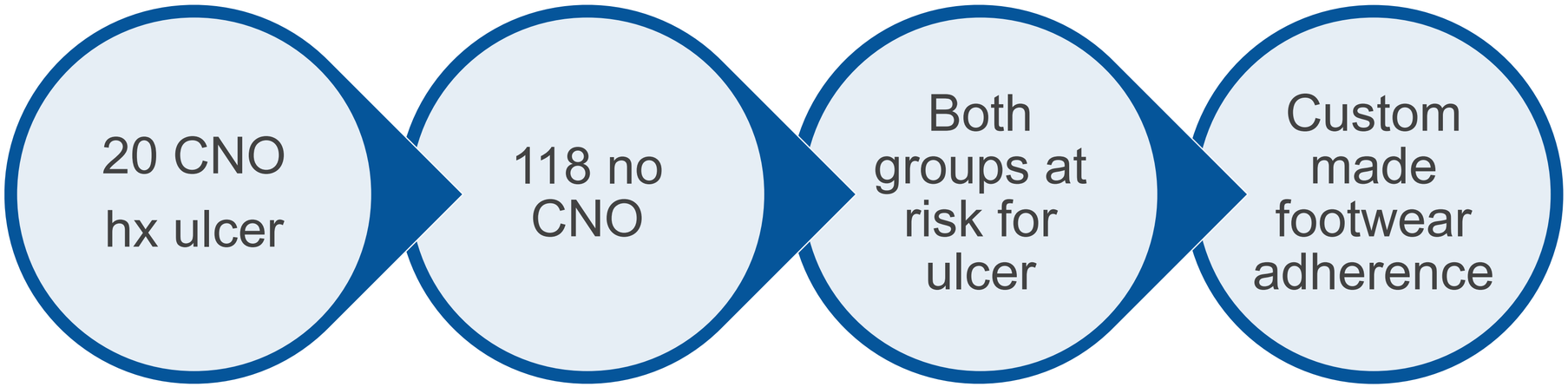


Barefoot midfoot peak pressures	• Higher CNO group
In shoe midfoot peak pressures	• Not significantly higher in CNO group, comparable between groups
Adherence	• CNO significantly more adherent (close to 100%)
Ulcer recurrence	• 40% in CNO group • 47% no CNO group

Keukenkemp et al, Diabetic Medicine 2020

Clin Orthop Relat Res (2010) 468:1002–1011
DOI 10.1007/s11999-009-0972-x

SYMPOSIUM: RECENT ADVANCES IN FOOT AND ANKLE SURGERY

Should One Consider Primary Surgical Reconstruction in Charcot Arthropathy of the Feet?

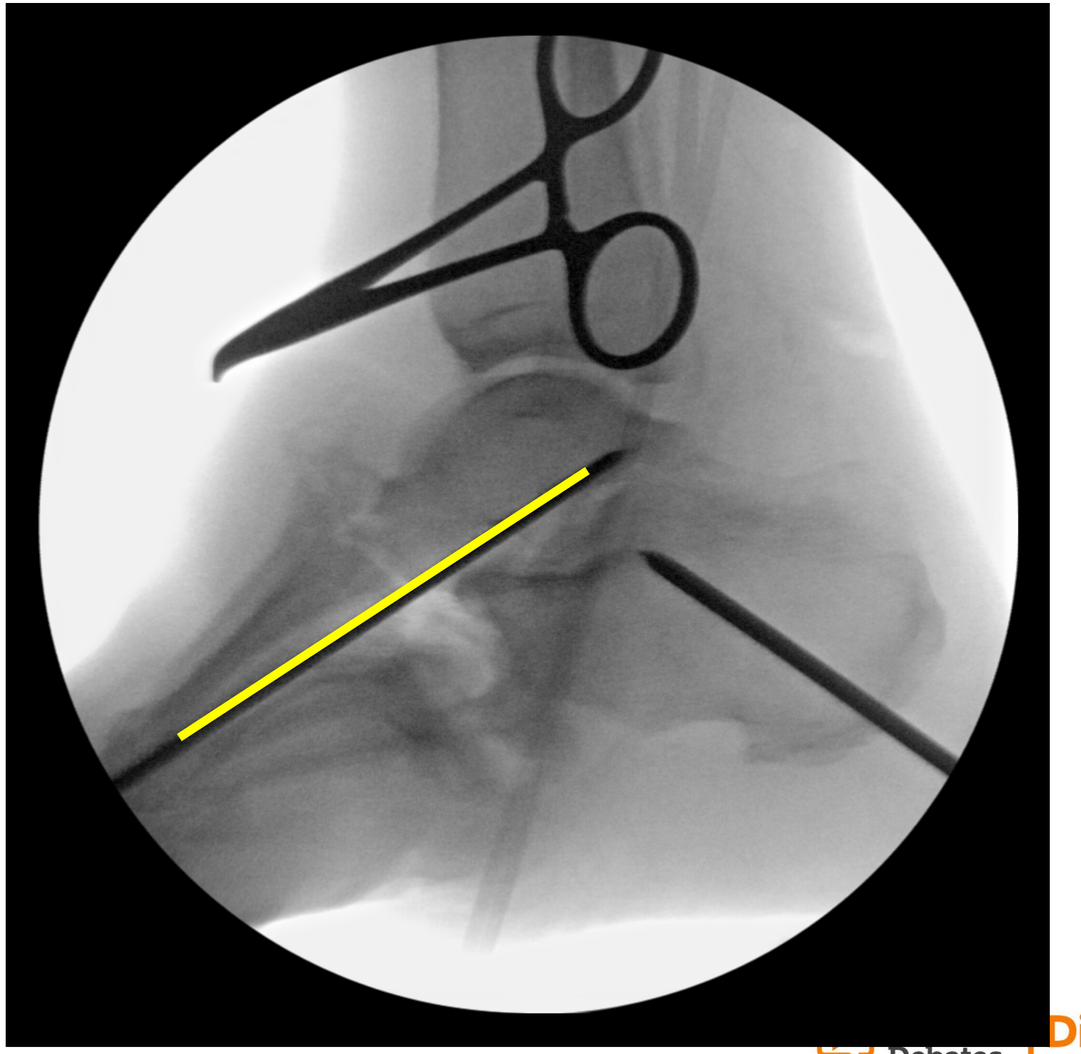
Thomas Mittlmeier MD, K. Klaue MD,
Patrick Haar MD, Markus Beck MD

- 40-50% of non-op may require surgery due to recurrent ulcer/deformity
  - Prolonged immobilization, diminished QOL, increased costs
- Still complications with early tx but perhaps less compared to secondary intervention
- “We believe surgical reconstruction in Charcot feet should not be limited to a salvage procedure and an alternative to amputation in failed non-operative care.”

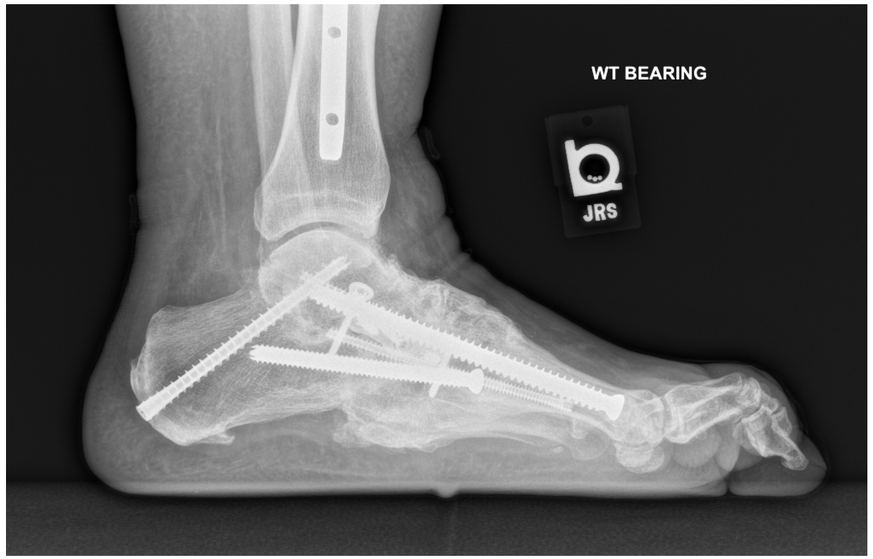
Optimizing Surgical Outcomes

- Intra-operative re-alignment
- Construct considerations

Restoration of Talo-First Metatarsal Angle, Cuboid Height



“Standardized” Fixation Construct, Plantar Medial Plate



Does the type of fixation make a difference?

A Systematic Review of Intramedullary Fixation in Midfoot Charcot Neuroarthropathy

Dane K. Wukich, MD[1], George T. Liu, DPM[2], Matthew J. Johnson, DPM[1], Michael D. Van Pelt, DPM[2], Katherine M. Raspovic, DPM[1], Trapper Lalli, MD[1], Paul Nakonezny, PhD[3]

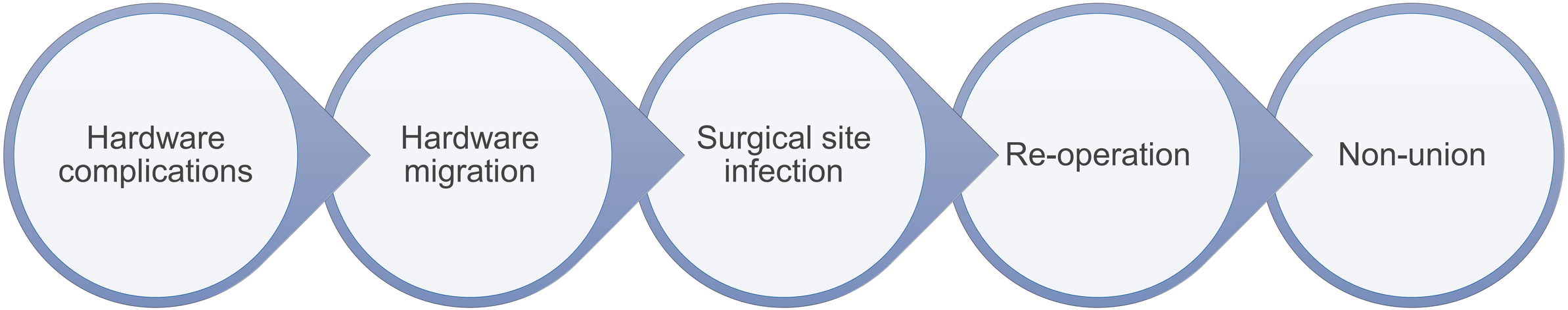
[1] *Professor and Chair, Department of Orthopaedic Surgery, University of Texas Southwestern Medical Center, Dallas, TX*
[2] *Associate Professor, Department of Orthopaedic Surgery, University of Texas Southwestern Medical Center, Dallas, TX*
[3] *Department of Clinical Sciences (Biostatistics), University of Texas Southwestern Medical Center, Dallas, TX*

1. Evaluate outcomes of intramedullary fixation

2. Compare outcomes of Charcot specific implants to non-Charcot specific implants

Wukich DK, et al. *J Foot Ankle Surg*. 2022:S1067-2516(22)00119-3.

CN Specific Implant Group Had Significantly More

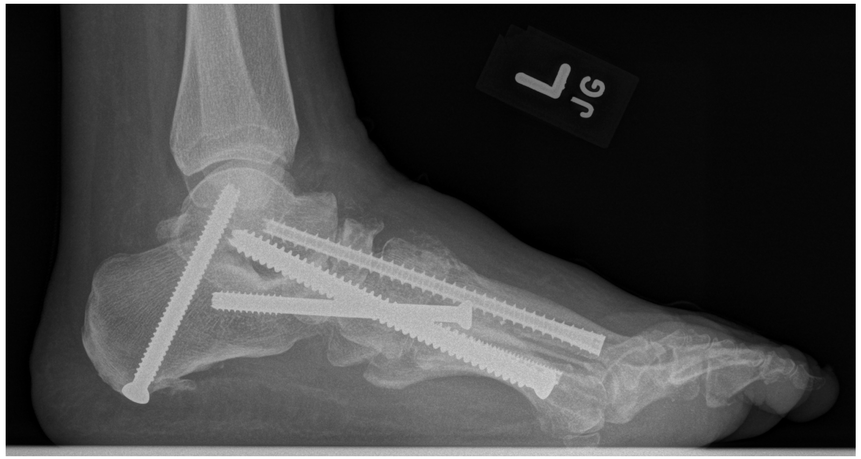


Also had lower rates of limb salvage

Wukich DK, et al. *J Foot Ankle Surg*. 2022:S1067-2516(22)00119-3

Discussion

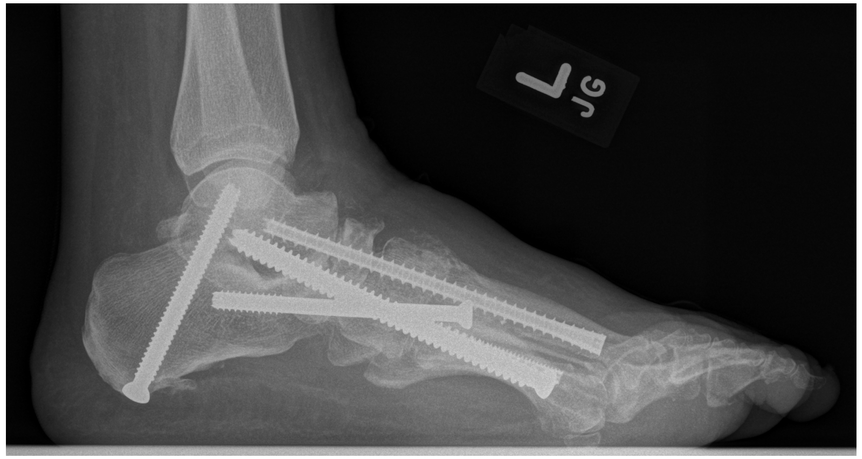
- **Overall limb salvage rate 92%**
  - ***31% active ulcer at time of reconstruction***
  - 97% of patients alive at 25 month follow up



Wukich DK, et al. *J Bone Joint Surg Am*. 2014;96(10):832-9.

Discussion

- **Higher rate of adverse outcomes in CN specific implant group**
  - >70% of the implants in this group were the “midfoot fusion bolt”
    - Several reports included cited high complication rates
  - Less supplemental fixation of the medial column
    - Ex: plate or external fixation plus IMF

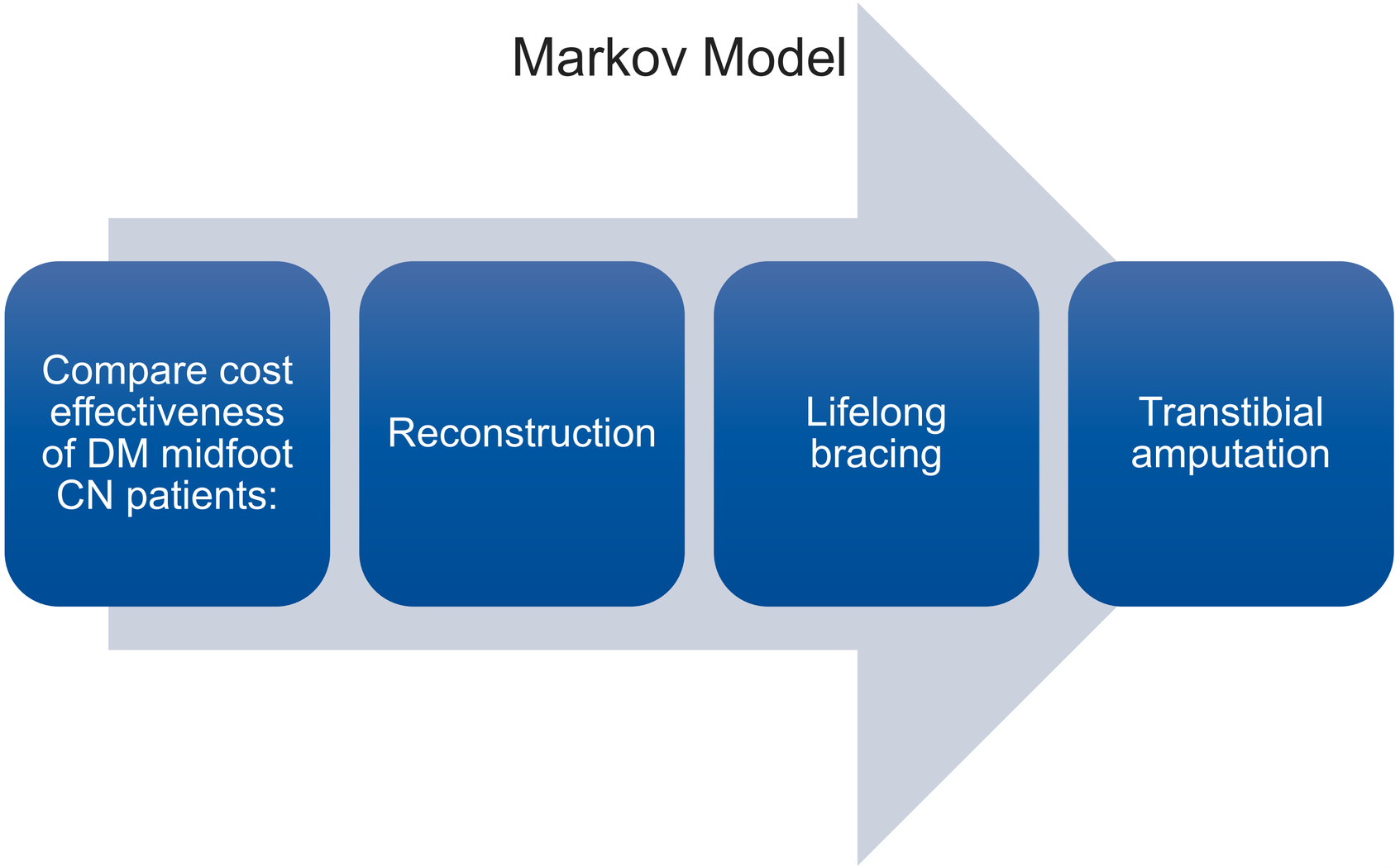


Wukich DK, et al. *J Foot Ankle Surg*. 2022:S1067-2516(22)00119-3

Is Reconstruction of Unstable Midfoot Charcot Neuroarthropathy Cost Effective from a US Payer's Perspective?

Albright RH, et al. *Clin Orthop Relat Res*. 2020;478(12):2869-2888.

Base Case Scenario: 50-year-old Adult with Diabetes, Unstable Midfoot Charcot Deformity, Nonplantigrade Foot



Albright RH, et al. *Clin Orthop Relat Res*. 2020;478(12):2869-2888.

3 Progressively Worsening Scenarios to Identify Optimal Time to Use Each Strategy

- No ulcer
- Uncomplicated ulcer
- Infected ulcer

Key Findings

- **CN NO ulcer and CN + uncomplicated ulcer**
  - Reconstruction most cost effective strategy

- **CN + INFECTED ulcer**
  - Bracing most cost effective strategy
    - Increased cost of interventions, shorter life expectancy with 50% mortality at 11 years

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Thank You!

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