Fig. 1 a-b: Failed midfoot (Chopart) fusion with small fragment screws in a 46 year old overweight female with Charcot arthropathy. A stable midfoot alignment was achieved with a plantar interlocking plate and multiple large fragment screws buttressing both the Chopart and Lisfranc joints. c: 2 years after fusion the patient is ambulating freely on a plantigrade foot.

References:

Static Ring Fixation in Charcot Foot Arthropathy

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77 year old longstanding diabetic who weights 215 pounds and has not walked on this foot for almost 1 year.
The goal is treatment: a favorable outcome is defined as:

- Ulcer and infection-free
- Able to resume independent walking
- Longitudinal management with commercially-available therapeutic footwear

Patient risk factors that favor use of a static circular fixator:

- Open wounds, ulcers, osteomyelitis
- Morbid obesity
- Osteoporosis / poor bone quality
- Immune deficiency

Surgical Steps
1. debridement of all infected bone
2. correction of deformity
3. provisional fixation with K-wires
4. maintenance of correction with pre-assembled static circular fixator

References

CHRONIC LISFRANC and CHARCOT MIDFOOT ARTHROPATHY:
Reconstruction with Transpedal Closing Wedges & Plantar Plating

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I. Goals of treatment:
Achieve stability, establish a plantigrade foot, maintain ulcer- and infection-free tissues, limit acute flares of Charcot or arthritis, maximize biomechanical function, balance malalignments, reduce neuropathic and arthritic pain

II. Classification:
A. Midfoot deformities based on degree of collapse (Schon Stage)
   A = mild collapse
   B = midfoot, touching the floor
   C = midfoot, below level of metatarsal
B. Radiographic Types: Location of deformity: midfoot and hindfoot
   Schon Types I-IV: Radiographic diagnosis
   Type I deformation occurs through Lisfranc; plantar prominence begins medially and progresses in stage C (severe) to plantar-laterally; most of these feet are abducted.
   Type II deformation begins at the naviculocuneiform joint and progresses in Stage C to the 4th and 5th metatarsal-cuboid joints. Plantar prominence begins laterally under the 4th to 5th metatarsal-cuboid joints and then progresses medially; approximately half are abducted.
   Type III deformation begins with collapse of the navicular. The plantar prominence is under the 4th to 5th metatarsal-cuboid joint. The foot often supinates and adducts.
   Type IV deformity is through the transverse tarsal joints. Plantar prominence is under the calcaneo-cuboid joint and/or under talus or navicular.
C. Radiographic: Severity
   Alpha – better prognosis, less likely to require aggressive long-term surgical or non-surgical intervention. Lower risk of ulceration, infection or osteomyelitis. All of following criteria must be met.