8:00 – 8:05 am
Making the NC Arthrodesis Work
Carroll P. Jones, MD
Charlotte, North Carolina

Naviculocuneiform Arthrodesis for Adult Flatfoot

Historical

1) 1920’s: Miller described procedure in children and adolescents for flexible flatfoot; included NC and TMT fusion, TAL, and PTT osteoperiosteal flap advancement
2) 1931: Hoke described NC fusion in flatfeet for adolescents and adults
3) 1983: Modified Hoke-Miller procedure described, which included opening wedge osteotomy of medial cuneiform in addition to NC fusion
4) 2005: Greisberg et al reported on isolated medial column fusion (NC +/- first TMT) with PTT debridement and FDL transfer for adult-acquired flatfoot

Procedure Rationale

1) Stabilizes arch/medial column in sagittal plane (address “sag” at NC joint)
2) Derotates forefoot
3) Shortens medial column, if desirable
4) Maintains hindfoot motion (limits functional loss by sparing hindfoot from arthrodesis)
5) Always as adjunct to soft-tissue procedure (ie PTT advancement, FDL transfer)

Indications

1) Adolescent and adult-acquired flatfeet
2) Flexible deformity (unless used as adjunct to corrective hindfoot arthrodesis)
3) Preoperative “sag” noted along Meary’s line on weight-bearing radiograph
4) There is not a universally accepted standardized algorithm that incorporates NC arthrodesis (inconsistently utilized procedure)

Clinical Reports

1) Pediatric/adolescent population in isolation, with medial soft-tissue procedure: Miller, Fraser
2) Isolated medial column fusion with medial soft-tissue procedure for adult-acquired flatfeet: Greisberg et al
3) Medial column fusion with lateral column lengthening in adult-acquired flatfeet: Chi et al
4) Naviculocuneiform arthrodesis with subtalar fusion: Barg et al

References

1) Miller OL. A plastic flat foot operation. JBJS Am 1927; 9: 84-91.