An algorithm to assist the surgical decision making in the operative management of the cavovarus foot

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Disclosures

- There are no disclosures required for all authors
Cavovarus foot

- Common!
- Systematic “a la carte” approach
- Start correction at the hindfoot and work progressively forwards.
- Balance forces & reassess at each stage.
General rules

- Bony correction will only be maintained if muscle balance is re-established and tendon transfers should be considered, even when arthrodesis has been performed simultaneously [1-3].

- Fixed deformities often require corrective arthrodesis, but flexible deformities can be treated with soft tissue balancing and realignment osteotomies.
Cavovarus foot treatment algorithm

Equinus?
  Y → Silfverskiöld?
  N

Varus talar tilt?
  Y → Degenerative ankle?
  N → Heel varus?
  Y → Degenerative subtalar joint?
  N → Soft tissue imbalance?
  Y → Foot drop?
  N → Inversion?
  Y → Persistent cavus?
  Y → Forefoot pronation?
  Y

Silfverskiöld?
  + → Gastrocnemius release
  -

Degenerative ankle?
  Y → Ankle fusion
  N → Brostrom ± Deltoid release

Degenerative subtalar joint?
  Y → Gross deformity
  N → Degen. Chopart joint

Gross deformity
  Y → Talectomy
  N → Corrective subtalar fusion
  Y → Triple fusion
  N → Calcaneal osteotomy

Soft tissue imbalance?
  Y → Tib post transfer
  N → P longus to P brevis

Foot drop?
  Y → Plantar fascia release
  N → 1st MT dorsiflexion osteotomy
Heel Varus

- Correctable? Degenerate?
- Calcaneal osteotomy in 60%
  - most modified Dwyer
- Talectomy for severe deformity
  - esp tight medial soft tissue

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Tendon transfers

- Soft tissue balancing
  - Even in combination with arthrodesis
- Tibialis posterior, Tib post
  - Split tenodesis to tibialis anterior and peroneus brevis
- Peroneus longus, PL, to Peroneus Brevis, PB, tenodesis
Midfoot correction

- Plantar fascia release
- 1st MT closing wedge osteotomy for residual pronation
  - Gets foot flat on floor
  - Powerful
  - 58% cases

Persistent cavus? → Plantar fascia release
Forefoot pronation? → 1st MT dorsiflexion osteotomy

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Conclusion

- The cavus foot is a complex deformity that requires careful clinical assessment.

- Conservative treatment is an option, but progressive deformities frequently necessitate surgical correction.

- Surgical decision making is based on an ‘a la carte’ approach, tailoring the procedures to the individual’s diagnosis and deformity.

- Whilst osteotomies and fusions are often required, it is vital to achieve correct soft tissue balancing, with appropriate tendon transfers [1-3].

- Recovery from surgery can be lengthy, but if performed correctly can significantly improve function, by achieving a plantar grade foot.
References

