I. **Problem**
   a. The floating toe is a complication commonly associated with distal lesser MT osteotomies of the “Weil” type. Clinically, the toe often does not approximate the floor and therefore does not participate fully in weight bearing. In addition, the dorsiflexed position is often associated with pain from shoes rubbing. The floating toe is reported to occur in 15-50% of toes after Weil osteotomy.

II. **Pathomechanics**
   a. *Trnka*: Interossei extend MTP 2° to change (plantar) in center of rotation
   b. *Weil*: flexor tendon laxity (quadrigia)
   c. Various stages of plantar plate insufficiency have been associated with the clinical picture of lesser metatarsalgia and occasionally sagittal and axial malalignment. The relationship is becoming clearer but causation less so.

III. **Prevention** – Is a distal osteotomy the only/best option? Prevention of this complication is predicated on a thorough evaluation and understanding of the pathomechanics (insufficient first ray, tight Achilles, etc) that may be present, as well as alternatives that may accomplish the same goal without the risk of a floating toe (MT shaft shortening etc). Finally, combining the Weil osteotomy with plantar plate repair (*Nery, Coughlin*), FDB transfer (*Thodarson*), or pinning (*Weil*) have all been suggested.

In cases of **isolated metatarsalgia**, consider these causes and potential solutions:

   a. Insufficient 1st ray (short, dorsiflexed, or mobile)
      i. Consider Lapidus or similar biomechanical solution
   b. Gastrocnemius/ Achilles tightness
      i. Consider Strayer or TAL
   c. Fat pad atrophy, distal migration of fat pad (rheumatoid)
      i. Consider Hammertoe correction
         ii. Consider Fat pad “imbrication”, proximal displacement

In cases of **crossover 2nd toe, and/or subluxation**, consider all of the above plus:
   a. Isolated plantar plate repair (*Coughlin, Nery*)

In cases of **MTP dislocation**, consider:

   a. Diaphyseal osteotomy (*Bohay*) with plantar plate repair
   b. FDB transfer (*Haddad, Thodarson, Kwon*)
c. Pinning (Weil)

IV. Salvage

a. Flexor to extensor transfer
   i. Various techniques have been described, usually utilizing the FDL but occasionally FDB or both. Overall, patient satisfaction rates have been more variable than ideal: 51-90% (Kwon, Myerson)

b. Plantar plate repair
   i. Appears to address much of the problem (Coughlin, Nery). So much so, that plantar plate repair may well become a frequent companion of the Weil osteotomy at the index operation

V. References


NOTES