Failure of Tarsal Coalition Resection: Should Deformity Be Corrected?  
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I. Tarsal coalition  
a. Two common types  
   i. Talo-navicular  
   ii. Calcaneo-cuboid  
   iii. Others occur at much smaller incidences  
b. Not always symptomatic  
   i. When symptomatic C-N coalitions tend to present earlier (8-12 yrs of age)  
   ii. Pain, recurrent sprains, flatfoot  
c. Not always problematic  
   i. Once they become symptomatic, they tend to require treatment  
   ii. Can result in moderate to severe deformity but this is not uniform

II. Pathomechanics  
a. Normal subtalar orientation is ~40 degrees off vertical and 15 degrees internally rotated  
b. Stance creates shift of ST joint of about 10 degrees from valgus to varus  
c. Restriction of motion caused by coalition leads to stress transfer to tarsal joints and puts abnormal stresses on foot leading to loss of arch, flattening and resultant peroneal tightening  
d. Normal glide of ST joint becomes more hinge like motion  
e. Navicular starts to override talus leading to impingement and talar beaking  
f. Degenerative changes can occur

III. Treatment  
a. Prior treatment dependent  
   i. Immobilization may work but is often temporary solution  
b. Age dependent  
   i. Joint sparing is more predictable in younger pts (<14)
ii. Adult pts tend to have less reliable results with resection (18)
   
   1. Fusion

   2. Option to resect if risks are explained
      
      a. Recurrence
      
      b. DJD necessitating more surgery

iii. 14-18 is a gray area

iv. Resection can be done at any age if the patient wishes to incur the risk of a possible undesirable outcome as a trade off for possibility of joint salvage and mobility

v. Resection in the face of a flatfoot can encourage further valgus shift as there is one major medial restraint removed

IV. Complications

a. Recurrence
   
   i. Most common complication
      
      1. Avoid by generous resection and fat or bone wax interposition
      
      ii. Can re-resect or arthrodese
      
      iii. Must correct foot mechanics to prevent further collapse

b. Persistent deformity
   
   i. Worsens based on mechanics (see above)

V. Suggestions for Solutions

a. If surgical treatment is recommended, consider single stage reconstruction of flatfoot deformity

b. Alternatively, surgeon could plan staged but relatively brief interim between procedures for reconstruction

c. Tenets of flexible flatfoot procedure for any other etiology are followed AFTER coalition is resected
   
   i. MDCO
   
   ii. Possible LCL
iii. Possible medial column procedure

iv. Possible TAL

v. Consider Peroneus brevis to longus transfer to promote 1st ray PF

d. Failure results in need for fusion

i. Subtalar vs triple

ii. May still need osteotomies based on severity of developmental deformity

Good Review

Gougoulas, O’Flaherty, Sakelleriou,: Foot and Ankle Clinics of North America 19(3), September 2014

NOTES