Gutter Impingement – Causes and Treatment

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The Reality:

1) Unlike the knee, the ankle is a true tri-compartmental joint
   a. Articulation occurs between the tibia and talus, but also between the talus and medial/lateral malleoli
      i. Patients with significant arthritis in these “gutters” continue to have arthritic pain and stiffness

1. Gutter debridement is the solution
   a. Prosthesis must have inherent stability to accommodate aggressive gutter debridement, or coronal plane subluxation will occur
      i. Creates varus/valgus deformity or impingement against malleoli

Coronal plane instability may not allow aggressive gutter debridement
b. The posterior capsule is an often unrecognized component to ankle joint stiffness
   i. Particularly in post-traumatic arthritics
1. Capsule is thickened with scar following the index trauma  
   ii. Capsule thickening can occur in post-operative phase from ankle replacement  
       1. Joint space hematoma with even short-term immobilization can cause this contracture  
   iii. Solution will involve separate incision posterior capsule release, with early mobilization

Significant stiffness despite no evidence of bone impingement

Generous posterior capsule release through coronal plane Achilles tendon lengthening approach

c. In cavovarus deformities, the posterior based fibula may not undergo sufficient resection to provide clear space for the articulating talus  
   i. This also can provide posterior impingement and subsequent stiffness  
   ii. Solution will involve resection of impinging fibula against talar prosthesis  
      1. Often better done through posterior approach to insure too much fibula is not being removed
Posterior fibula impinging against posterior prosthesis, creating stiffness and pain