Proximal and Distal Tibia Fractures

Paul Tornetta III, MD
Boston Ma

1. Metaphyseal fractures
    a. Nail to canal mismatch
    b. Nail will not reduce, will only maintain after locking
    c. General principles
        1. Portal and trajectory must be perfect
        2. If reaming is performed it should be done in the reduced position
        3. Only straight guidewires for reaming and nailing
        4. Maintain reduction when nailing
        5. If errors, move to secondary tools quickly (don't struggle!)
            a. If open, the clamp or miniplate early
        6. Polyaxial and/or locked screws in short segment
        7. Peri-implant blocking and "stability" screws may help
        8. Prior to the second set of locking screws confirm rotation of limb
2. Proximal fractures:
    a. Be wary of intraarticular extension
        1. Can place posterior screw or even plate
        2. Clamp for additional stability
    b. Anterior angulation
        1. Caused by extensor pull
        2. Nail in relative extension with superior portal and parallel anterior cortex
        3. Posterior proximal blocking screws
        4. Unicortical plates, push plates
        1. Clamps
    c. Valgus
        1. Caused by lateral tensioning of anterior compartment and medial portals
        2. Portal aligned with lateral spine
        3. Trajectory critical on AP view
        4. Lateral proximal blocking screw
        5. Lateral plate
3. Distal fractures
    a. Can go anywhere!
    b. Evaluate for posterior malleolar fractures…common!
        1. If present then fix first or may displace
    c. Nail in relative extension for biplanar fluoro without moving leg
    d. If spiral, just go right to the clamp!
    e. If comminuted, guidewire should be center center in the distal fragment or will create deformity
    f. Watch fracture for gapping if in extension.
        1. Distal lock then backtap to gain compression / contact
    g. Maintain reduction during locking
        1. Pushing to drill and place screws can deform
        2. Slightly imperfect screw can deform
        3. Blocking screws may help in distal and in proximal segment at times