

Blocking screws

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Disclaimer: please note that use of nail interlocking screws as blocking screws is an off-label application of the devices in question

- I. Blocking screws – what are they?
 - a. Devices used to “narrow” a medullary canal when the canal of a nailed, fractured bone is much larger than the medullary nail itself
 - b. May be used to improve fracture reduction and to minimize loss of reduction after nailing of a long bone fracture
 - c. Multiple devices may be used for this function (wires, screws, drill bits), not all of which are necessarily left in situ
- II. “Normal” locations for use of blocking screws
 - a. Proximal tibial metaphysis
 - b. Distal tibial metaphysis
 - c. Distal femoral metaphysis
 - d. Proximal femoral metaphysis
- III. Where do they go?
 - a. Generally, consider placing screws into the fracture segment containing the articular surface (e.g. if there is a proximal tibial metaphyseal fracture, place the screw(s) in the proximal fragment)
 - b. Place the screws on the CONCAVE side of the anticipated nail path
 - i. Consider deforming forces and the resultant fracture deformity
 - ii. Place the screws on the CONCAVE side of that fracture deformity
 - c. Remember to consider sagittal-plane deformities as well as coronal plane deformities; blocking screws may go anterior or posterior to the nail (in addition to medial or lateral)
 - d. In patients with poor bone quality (osteoporotic), consider placing blocking screws on both sides of nail in a given plane (medial AND lateral, and/or anterior AND posterior)
- IV. How are they used?
 - a. First, reduce the fracture, and maintain it reduced during reaming and nailing and interlocking
 - b. Consider placing blocking screws after nail placement, before removing any adjuncts holding reduction
 - i. If the reduction is very difficult, the blocking screw(s) can be placed first, before reaming or nailing
 - ii. Use care reaming past a blocking screw to avoid damage to reamers or iatrogenic fractures
 - c. Make sure that the blocking screw is placed into bone that is continuous with the closest articular surface (i.e. do not place blocking screws into an area of comminution)
 - d. Screws are often left in place; wires are not
 - i. In patients with poor bone quality, consider leaving the screws in place at the completion of the procedure
 - ii. In patients with very good bone quality, careful consideration to blocking screw removal may be reasonable (trabecular bone will “hold” nail and maintain reduction)