Talar Neck Fractures
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(a – Arthrex, Inc, Synthes)

Hawkins Type I fractures are truly non-displaced and can be treated be with non-weightbearing cast immobilization. If there is fear of displacement or a desire for the benefits of early motion, then percutaneous screw fixation can be performed. Type II fractures have displacement at the fracture site and subluxation or dislocation at the subtalar joint. While non-operative treatment can be considered if an anatomic closed reduction can be obtained and maintained, closed reduction and percutaneous fixation or open reduction and internal fixation are probably preferable. Type III fractures have displacement of the fracture site and displacement at the subtalar and ankle joints and require open reduction internal fixation. Type IV fractures were described by Canale and Kelly and have displacement at the fracture site and at the subtalar, ankle, and talonavicular joints and require open reduction internal fixation.

The talar neck fracture can be exposed and stabilized via an anteromedial approach in the interval between the anterior tibial and posterior tibial tendons. It is important to preserve the deltoid ligament and its blood supply to the talar body. If a concurrent medial malleolar fracture is present or a medial malleolar osteotomy required to reduce the talar body fragment, the incision is extended proximally. The addition of a second lateral incision allows better visualization of fracture reduction, inspection of the lateral subtalar joint for loose intra-articular bone fragments, and additional points of fixation. A posterolateral incision allows the placement of posterior to anterior screws from the posterior process of the talus which have been shown to be biomechanically stronger than anterior to posterior screws. In addition to screws, plates, and supplemental bioabsorbable pins or k-wires can be used for fixation. If there is significant comminution present, bone graft may be necessary and over-compression of the fracture site should be avoided. If significant articular damage is present, primary subtalar fusion may be considered.

Post-traumatic arthritis, subtalar greater than ankle, is the most common complication after talar neck fracture. The risk of avascular necrosis of the talar body increases with fracture type. Due to risk of skin compromise, closed or open reduction of dislocated ankle and subtalar joints should be performed emergently. Emergent definitive fixation of the fracture is probably not required as it is no longer felt to affect the rate of subsequent talar avascular necrosis. Other common complications of talar neck fractures include malunion (usually varus and dorsiflexion), nonunion, and infection.