



Dual Syndesmosis TightRope® Implant System

Surgical Technique



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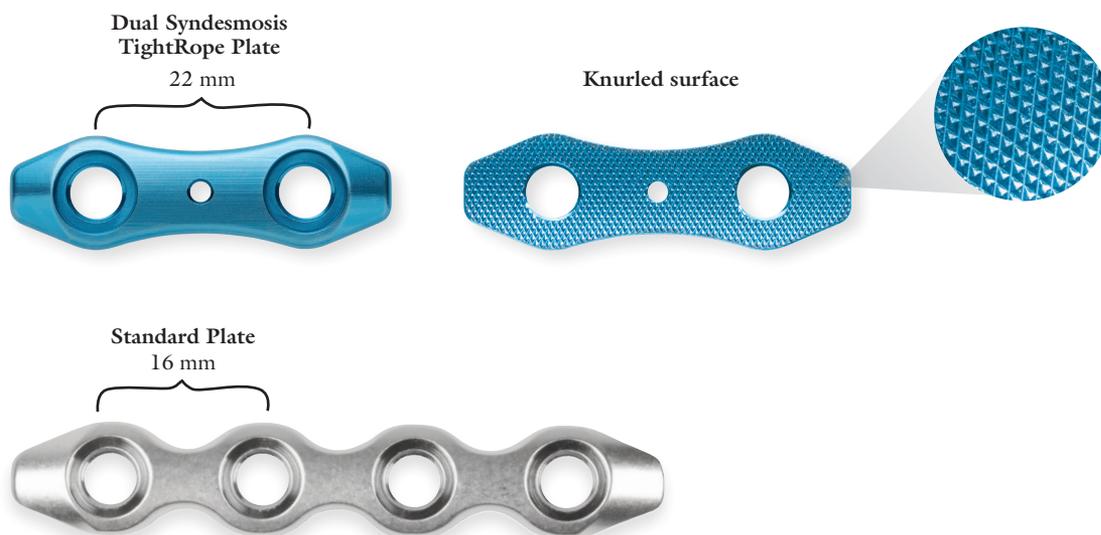
Isolated syndesmosis injuries can be stabilized with a minimally invasive technique by using a syndesmosis-specific two hole fibular buttress plate with two knotless syndesmosis TightRope implants. The syndesmosis plate improves reduction and fixation by increasing the surface area and features a large distance between the two inner holes to provide stability for the syndesmosis repair. The plate holes are also designed to fit the lateral button of the Knotless Syndesmosis TightRope implant system flush with the plate.

Advantages of the Syndesmosis TightRope:

- Improved reduction when compared to syndesmosis screws¹
- Improved maintenance of reduction when compared to syndesmosis screws²
- Equivalent fixation strength when compared to syndesmosis screws³
- No need for routine implant removal
- Supports early weight-bearing and accelerated rehabilitation¹
- Allows for physiologic motion of the syndesmosis following reduction and fixation
- Improved patient outcomes compared to syndesmosis screws⁴

Indications

The Syndesmosis TightRope implant system is intended to provide syndesmosis fixation following injury to the distal tibiofibular joint.



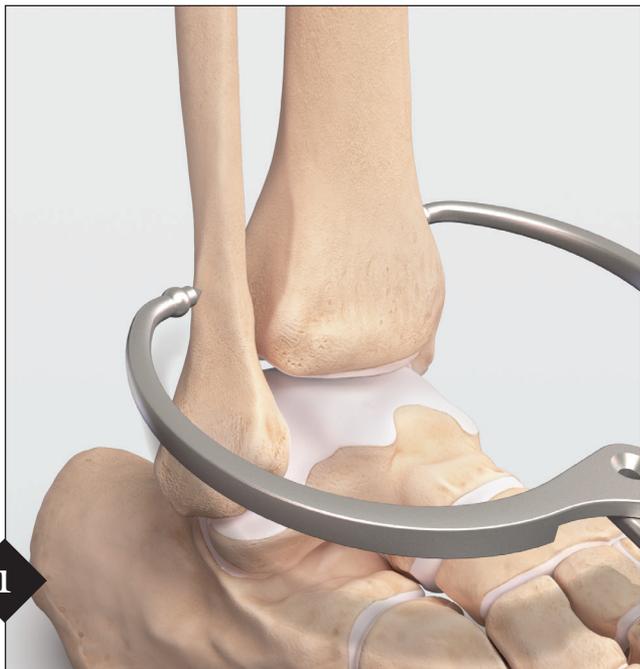
1. Naqvi, G; Cunningham, P; Lynch, B; Galvin, R; Awan, N. Fixation of Ankle Syndesmosis Injuries: Comparison of TightRope Fixation and Syndesmosis Screw Fixation for Accuracy of Syndesmosis Reduction. American Journal of Sports Medicine 2012; 40(12):2828-2834.

2. Cottom, J; Hyer, C; Philbin, T; Berlet, G. Transosseous Fixation of the Distal Tibiofibular Syndesmosis: Comparison of an Interosseous Suture and Button to Traditional Screw Fixation in 50 Cases. Journal of Foot & Ankle Surgery 2009; 48(6):620-630

3. Arthrex R&D Long-term Cycling of the TightRope Syndesmosis Repair Kit and 4.5 mm Synthes Cortex Screw

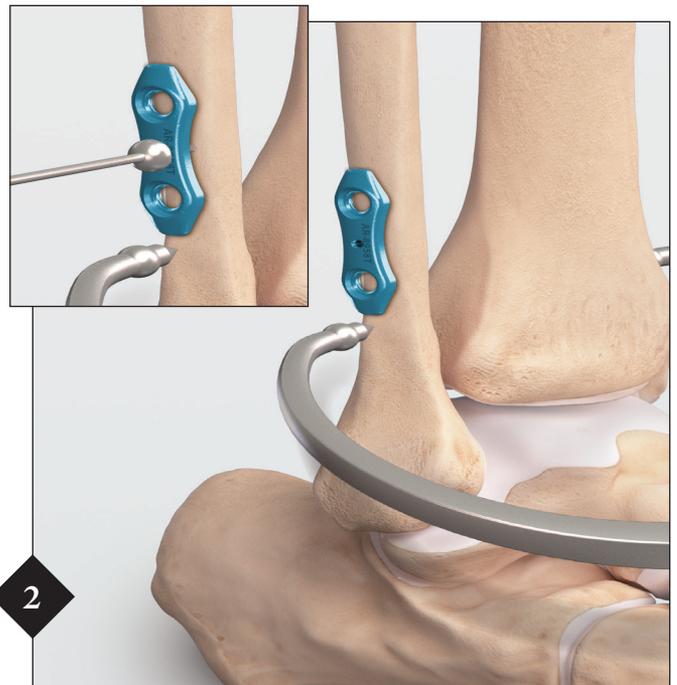
4. Laflamme, M; Glazebrook, M; Pelet, S; Prospective randomized multicenter trial comparing clinical outcomes of patients treated surgically with a static or dynamic implant for acute ankle syndesmosis rupture Journal of Orthopaedic Trauma, May 2015

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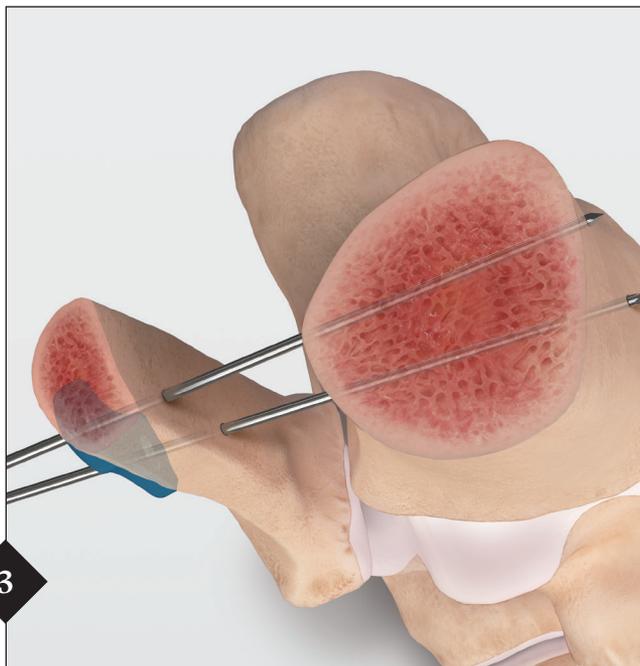


Syndesmosis Reduction

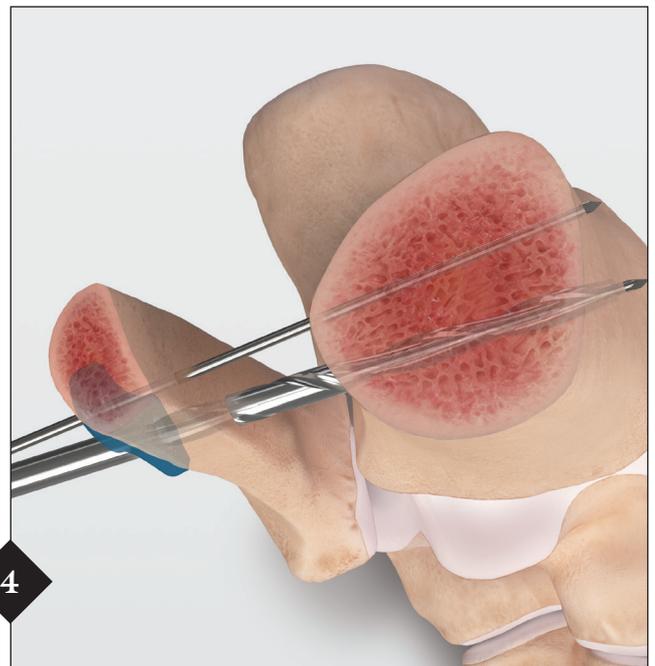
Reduce the syndesmosis anatomically with the Syndesmosis Clamp (AR-8943-44, fig. 1). Reduction may be confirmed using fluoroscopy, direct visualization during open reduction, (or both), or arthroscopy, based upon surgeon preference and severity of injury.



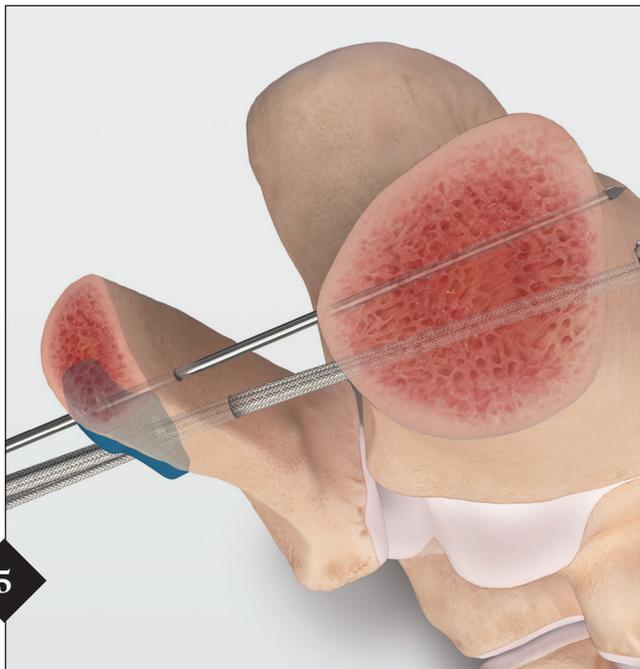
Apply the Two-hole Plate to the lateral fibula. The distal hole of the plate should be centered 2 cm proximal to the tibial plafond above the syndesmotic joint. Insert the threaded BB-Tak™ pin through the center of the plate on the lateral fibula for temporary fixation.



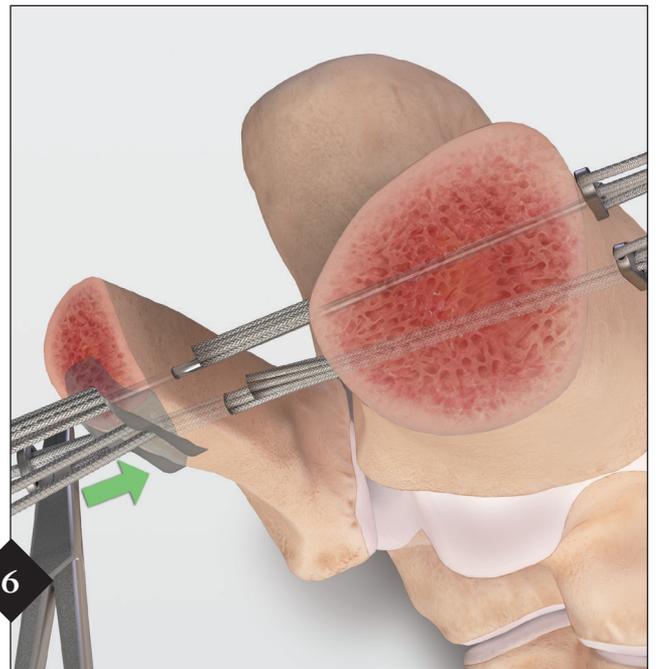
Insert the first guidewire through the distal hole, parallel to the tibial plafond, in the transmalleolar plane (directed 30 degrees anterior to the coronal plane). Insert the second guidewire, divergent from the first guidewire in the coronal plane (usually directed posteriorly), still parallel to the tibial plafond. The use of a guidewire and cannulated drill bit is recommended, allowing confirmation of accurate guidewire positioning prior to drilling. If the surgeon prefers non-cannulated drilling, a solid drill bit is also provided.



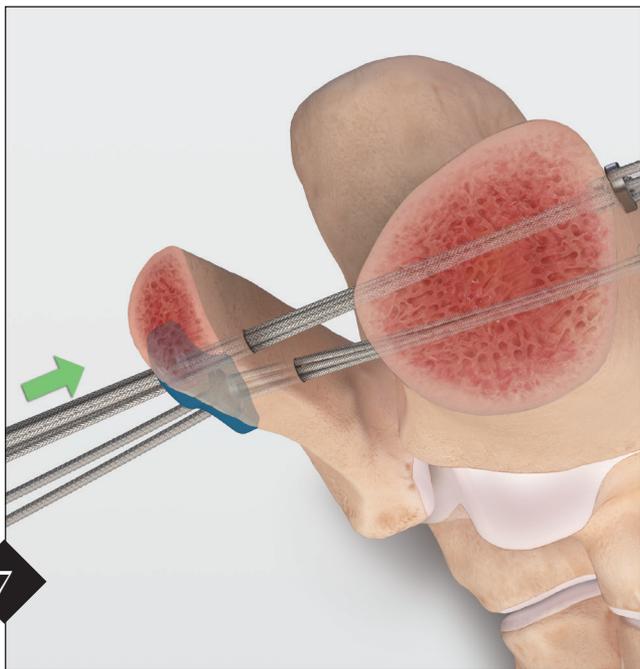
Drill with the 3.7 mm cannulated drill over the guidewire through all four cortices and remove the distal guidewire.



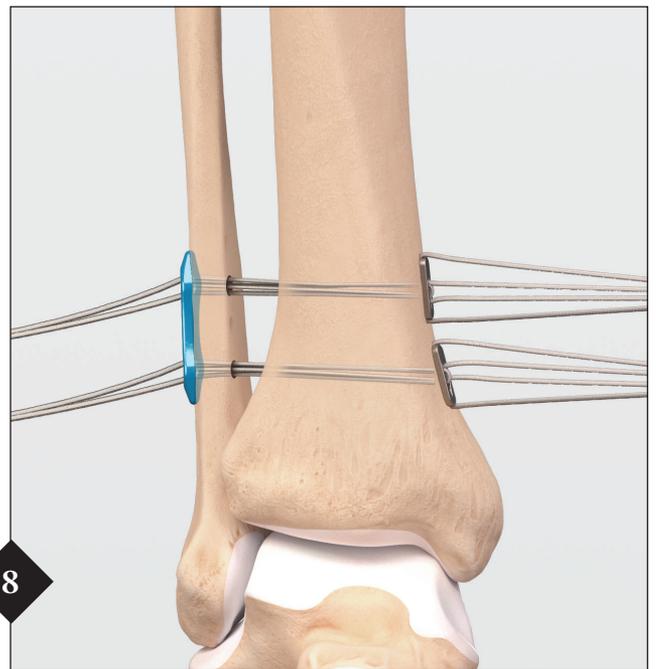
Insert the distal Knotless Syndesmosis TightRope® implant through the distal hole in the Syndesmosis Plate by pushing the needle lateral to medial. Ensure that the guidewire passes through both the fibula and tibial tunnels. The white 2-0 FiberWire® pull-through suture advances the leading Oblong Button, until it just exits the medial tibia cortex. Slight upward tension should be placed on the white pull-through suture, while placing downward tension on the green/white suture. This maneuver effectively “flips” the button from horizontal to vertical. With lateral traction on the round button, the Oblong Button should seat flat along the medial cortex of the tibia. Confirm placement using fluoroscopy.



A blunt hemostat is inserted under the round lateral button. With alternating short draws, pull the white strands on the lateral side of the ankle straight back toward the surgeon one at a time. The Round Button will be drawn towards the fibula. Remove the hemostat before final tightening. The lateral button will sit flush in the Syndesmosis Plate. The Oblong Button will sit on the medial cortex of the tibia and should be checked fluoroscopically. Some surgeons will choose to tension the TightRope sutures with the ankle in dorsiflexion.



Remove the proximal guidewire and insert the second Knotless Syndesmosis TightRope Implant in the same fashion. Tension appropriately.



The medial pull-through sutures are cut and removed. The white lateral sutures are cut flush with the round button.



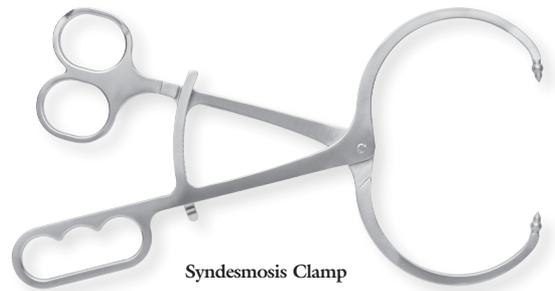
Final Construct.

Dual Syndesmosis TightRope® Implant System (AR-8958TDS):

- Knotless Syndesmosis TightRope implant, titanium, qty. 2
- Two-Hole Plate, titanium
- BB-Tak, threaded
- Guidewire, qty. 2
- Drill Guide
- Drill Bit, cannulated, 3.7 mm
- Drill Bit, 3.7 mm
- TightRope Guidewire Sleeve

Individual Syndesmosis TightRope Plates:

- | | |
|--|-------------|
| Two-Hole Plate, stainless steel | AR-8958-01 |
| Two-Hole Plate, stainless steel, sterile | AR-8958-01S |
| Two-Hole Plate, titanium | AR-8958-02 |
| Two-Hole Plate, titanium, sterile | AR-8958-02S |



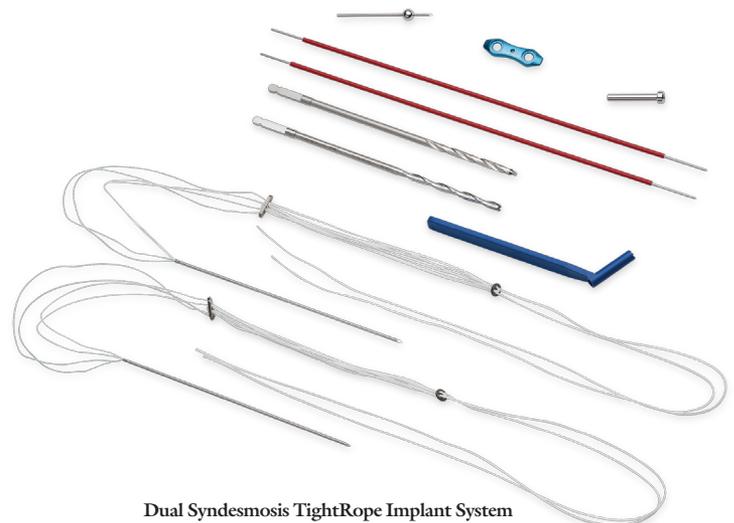
Syndesmosis Clamp

Postoperative Management

Following wound closure, immobilize the ankle in neutral dorsiflexion using a short leg, postoperative splint. Depending on fixation stability and severity of syndesmosis disruption, partial weight-bearing may be permitted in a cast or walker boot, between two to six weeks based upon surgeon preference. Full weight-bearing is typically allowed at six weeks, transitioning to a functional brace as tolerated. Postoperative management is patient and surgeon dependent.

Individual Syndesmosis TightRope Plate

The individual Two-Hole Plates are also available in stainless steel and titanium. They can be placed in the Ankle Fracture System and Complete Foot Set. A Syndesmosis TightRope® implant, locking 3.5 mm or nonlocking 3.5 mm screw can be used in the plate.



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