

Syndesmosis TightRope[®] XP Buttress Plate Implant System

Surgical Technique



Arthrex[®] 

Syndesmosis TightRope® XP Buttress Plate Implant System

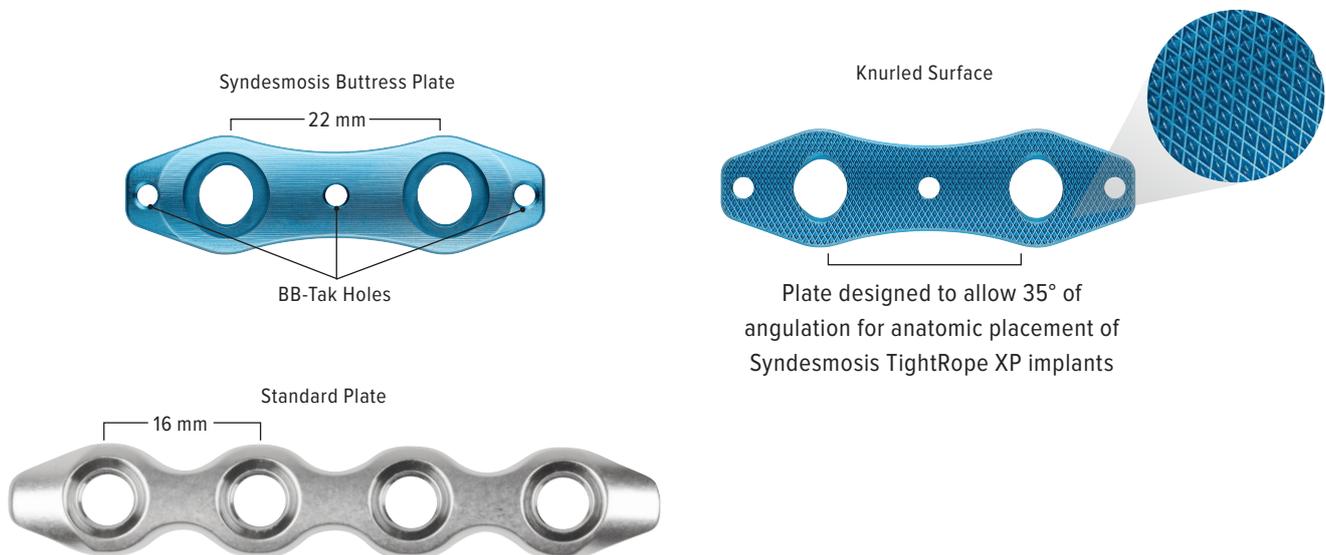
Isolated syndesmosis injuries can be stabilized with a minimally invasive technique using a syndesmosis-specific two-hole fibular buttress plate with two Syndesmosis TightRope XP implants. The syndesmosis buttress plate improves reduction and fixation by increasing the surface area. The large distance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

Advantages of the Syndesmosis TightRope XP Implant System:

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

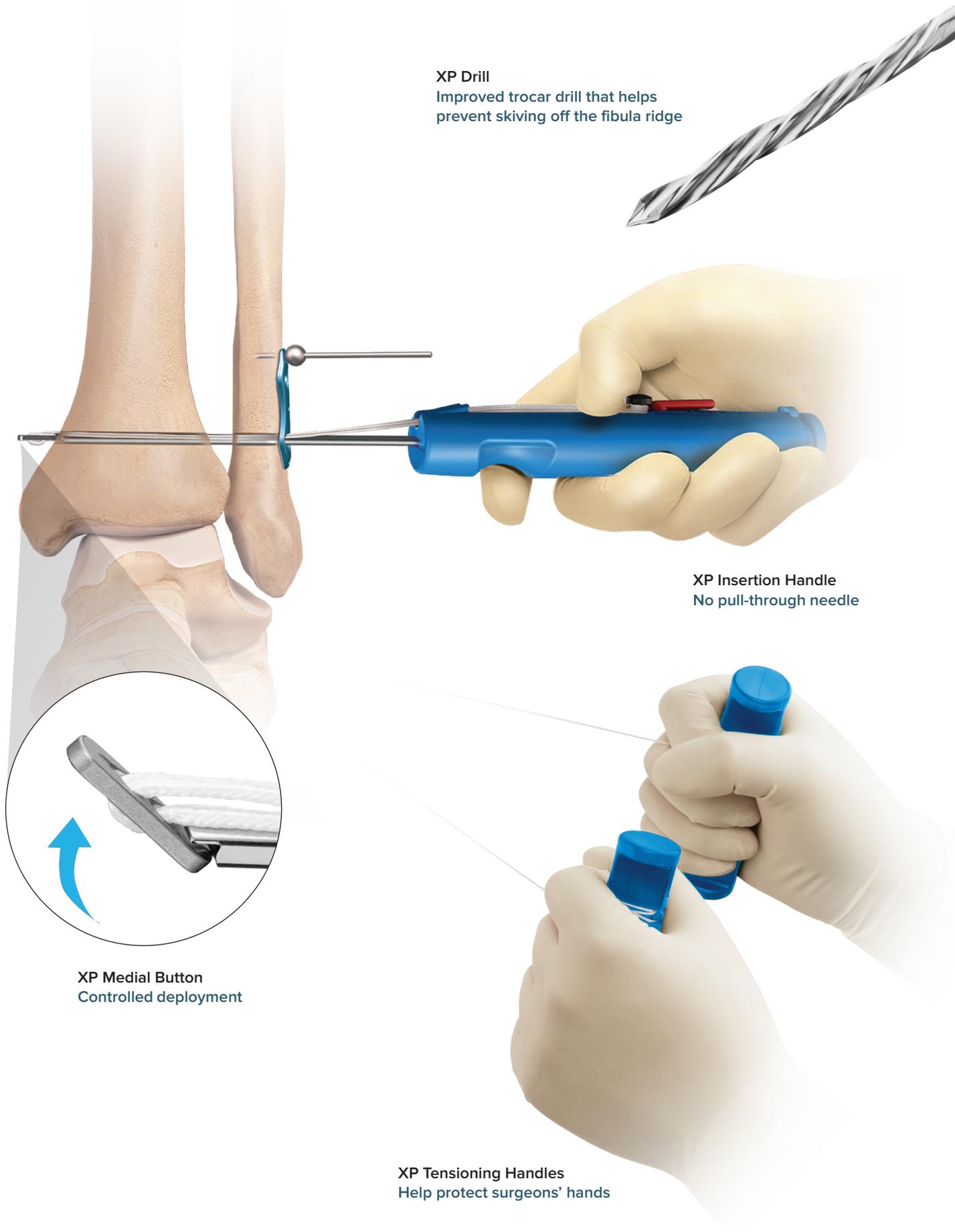
Indications

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



References

1. Naqvi GA, Cunningham P, Lynch B, Galvin R, Awan N. Fixation of ankle syndesmotic injuries: comparison of tightrope fixation and syndesmotic screw fixation for accuracy of syndesmotic reduction. *Am J Sports Med.* 2012;40(12):2828-2835. doi:10.1177/0363546512461480
2. Cottom JM, Hyer CF, Philbin TM, Berlet GC. Transosseous fixation of the distal tibiofibular syndesmosis: comparison of an interosseous suture and endobutton to traditional screw fixation in 50 cases. *J Foot Ankle Surg.* 2009;48(6):620-630. doi:10.1053/j.jfas.2009.07.013
3. Lafamme M, Belzile EL, Bédard L, van den Bekerom MP, Glazebrook M, Pelet S. A prospective randomized multicenter trial comparing clinical outcomes of patients treated surgically with a static or dynamic implant for acute ankle syndesmosis rupture. *J Orthop Trauma.* 2015;29(5):216-223. doi:10.1097/BOT.0000000000000245



XP Drill
Improved trocar drill that helps prevent skiving off the fibula ridge

XP Insertion Handle
No pull-through needle

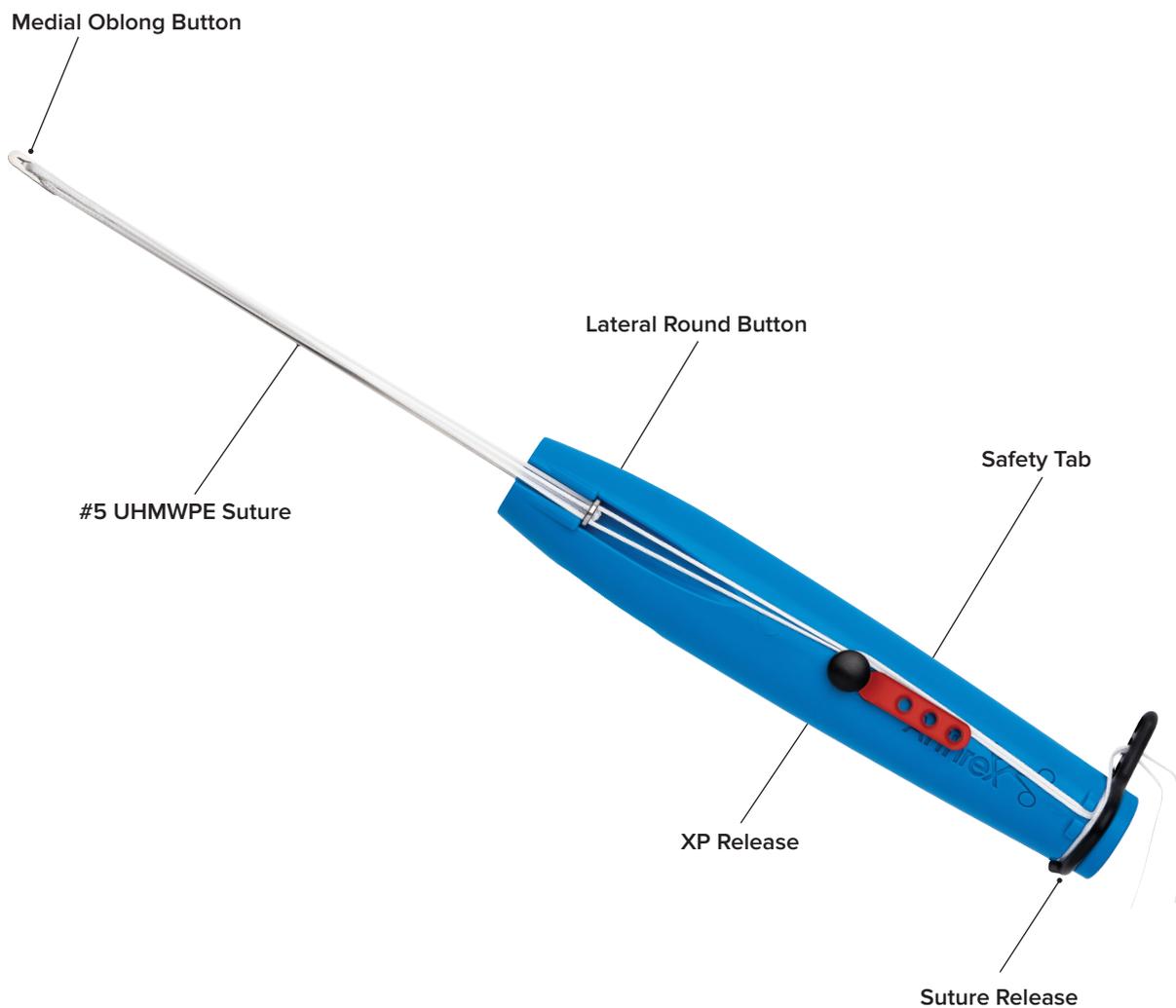
XP Medial Button
Controlled deployment

XP Tensioning Handles
Help protect surgeons' hands

Syndesmosis TightRope® XP Buttress Plate Implant System

The Syndesmosis TightRope XP implant system features a unique delivery mechanism that allows the user to insert a Syndesmosis TightRope XP implant without pulling a needle through the medial skin. The TightRope XP implant system gives the user control to flip the medial oblong button below the skin for less soft-tissue interposition.

Ergonomic Syndesmosis TightRope XP implant tensioning handles have also been added to the system. These handles are designed to tension the Syndesmosis TightRope implant without hurting the surgeon's fingers. The Syndesmosis TightRope XP implant system also features a new trocar style drill bit that reduces skiving off the fibula when drilling in the transmalleolar plane 30° anterior to the coronal plane.



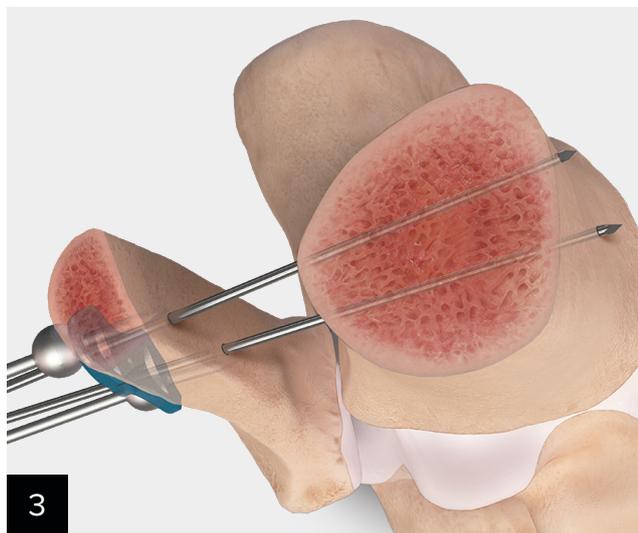


Syndesmosis Reduction

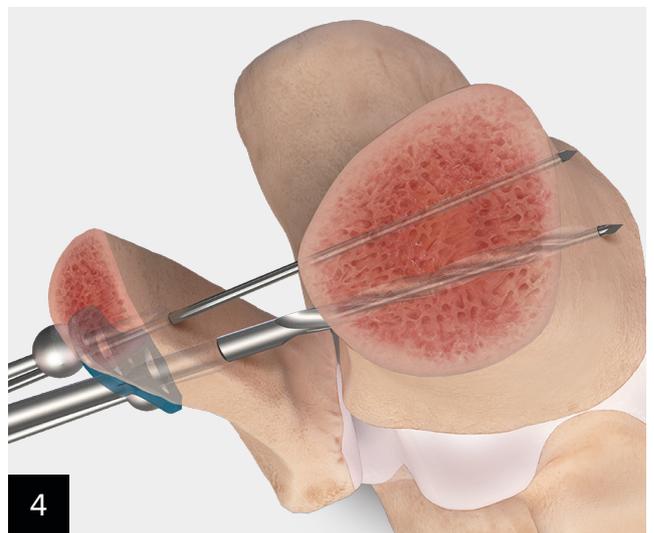
Reduce the syndesmosis anatomically with the Syndesmosis clamp (AR-8943-44). Reduction may be confirmed using fluoroscopy and/or direct visualization during open reduction, or arthroscopy, based on surgeon preference and severity of injury.



Apply the two-hole plate to the lateral fibula. The distal hole of the plate should be centered 1.5 cm to 2 cm proximal to the tibial plafond above the syndesmotic joint. Insert a threaded BB-Tak pin through the proximal and distal aspect of the BB-Tak hole on the lateral fibula for temporary fixation.

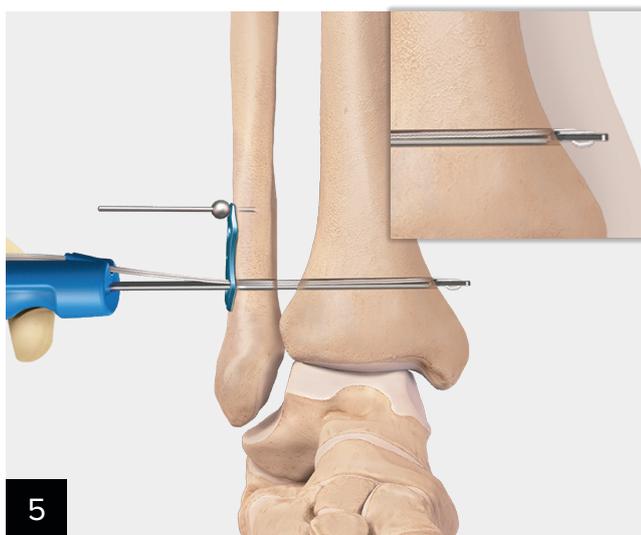


Insert the first guidewire through the distal hole, parallel to the tibial plafond, in the transmalleolar plane (directed 30° anterior to the coronal plane). Insert the second guidewire, divergent from the first guidewire in the coronal plane (usually directed posteriorly), still parallel to the tibial plafond. The use of a guidewire and cannulated drill bit is recommended to allow 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 and BB-Tak.

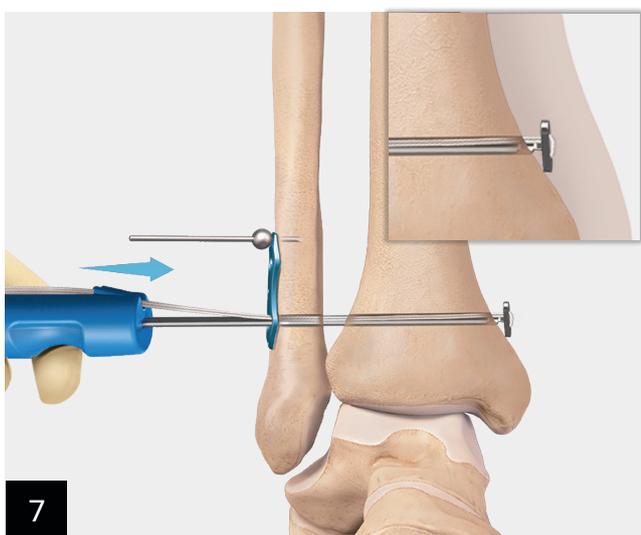
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Check under fluoroscopy to ensure the medial button exits the medial tibia cortex. Advance the Syndesmosis TightRope XP implant system through the fibula and tibia bone tunnel. Position the black button on the blue handle inserter cephalad or caudad. This will ensure that the oblong button will be positioned in line with the axis of the tibia after deployment.



Remove the red safety tab. Deploy the medial button on the Syndesmosis TightRope XP handle by engaging the black button away from the TightRope construct.

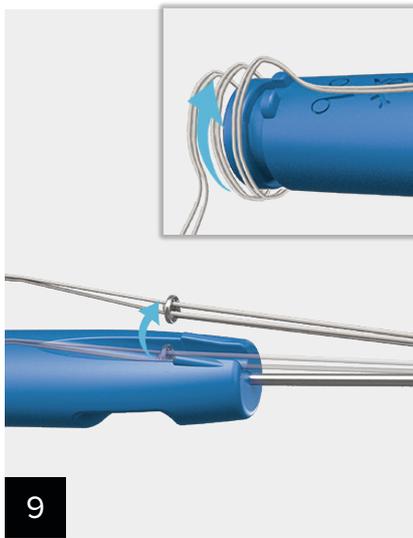


Important: After deploying the medial button, push the Syndesmosis TightRope XP implant medially. Visualize a T-shape on fluoroscopy.

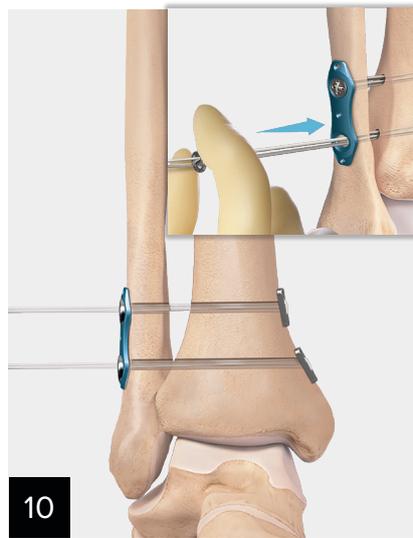


Pull back on the Syndesmosis TightRope XP handle and confirm on fluoroscopy that the oblong button is flipped and seated flush against the medial cortex of the tibia.

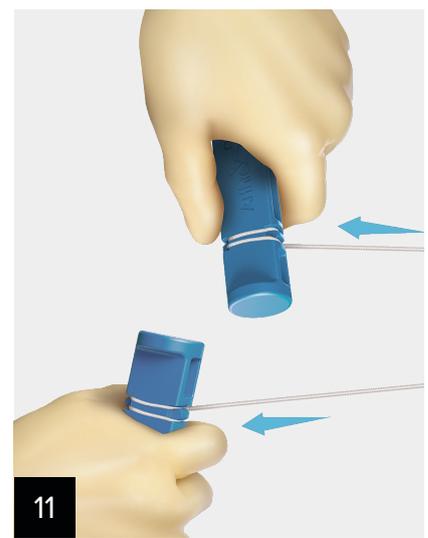
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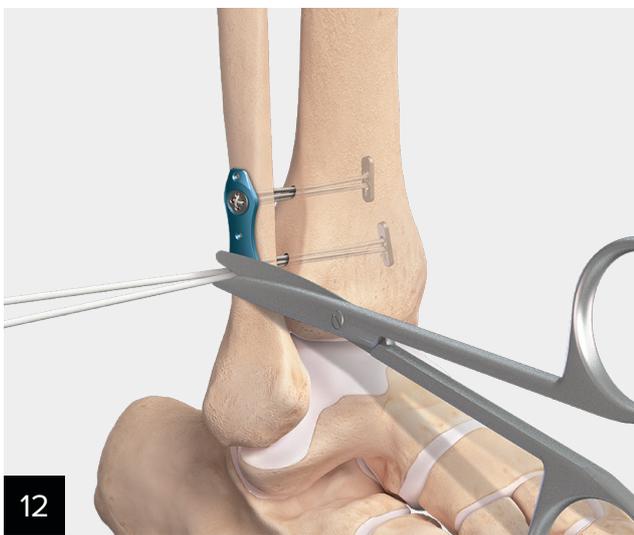
9
Unwrap the trailing sutures from the TightRope XP driver to release the round button. Remove the TightRope XP inserter from the bone tunnel.



10
Grasp the center sutures of the round button before tensioning. Slide the round button down to the plate or bone.



11
Wrap each suture tail 2 to 3 times around the XP tensioning handles. Pull the sutures straight back, one at a time, in the direction of the TightRope suture, toward the surgeon. The lateral button will sit flush.



12
Cut the white suture tails flush with the round button. Ensure the sutures on the TightRope button are not damaged while cutting the suture tails.



13
Final fixation.

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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 weightbearing may be permitted in a cast or walker boot between 2 and 6 weeks based on surgeon preference. Full weightbearing is typically allowed at 6 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 sterile stainless steel and titanium.

Syndesmosis TightRope XP Buttress Plate Implant System

Product Description	Item Number
Syndesmosis TightRope XP Implant, Ti, qty. 2 Two-Hole Plate, Ti BB-Tak, threaded, qty. 2 Guidewire, qty. 2 Drill Guide Drill Bit, cannulated, 3.7 mm Drill Bit, solid, 3.7 mm TightRope Guidewire Sleeve	AR-8959TDS

Individual Syndesmosis TightRope Plates

Product Description	Item Number
Two-Hole Plate, stainless steel, sterile	AR-8959-01S
Two-Hole Plate, titanium, sterile	AR-8959-02S



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This description of technique is provided as an educational tool and clinical aid to assist properly licensed medical professionals in the usage of specific Arthrex products. As part of this professional usage, the medical professional must use their professional judgment in making any final determinations in product usage and technique. In doing so, the medical professional should rely on their own training and experience and should conduct a thorough review of pertinent medical literature and the product's directions for use. Postoperative management is patient-specific and dependent on the treating professional's assessment. Individual results will vary and not all patients will experience the same postoperative activity level or outcomes.

View U.S. patent information at www.arthrex.com/corporate/virtual-patent-marking

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