SURGICAL TECHNIQUE

DYNAMIC LATERAL ANKLE STABILIZATION TECHNIQUE UTILIZING ARTELON® FLEXBAND™ TECHNOLOGY

Described by Ryan T. Scott, DPM, FACFAS. (Phoenix, AZ)

Lateral ankle injuries are a commonly occurring pathology that can lead to chronic lateral ankle pain or instability. Addressing these through anatomic reconstruction has been shown to give superior outcomes; and with new technology, augmented lateral ligament reconstructions have become standard of care.

The technique described here offers an advanced surgical method for dynamic lateral ankle reconstruction. Significant to this technique is the utilization of a novel Dynamic Matrix™. In augmented repairs, Artelon's FlexBand Matrix immediately aids in the restoration of joint kinematics, resists degradation of mechanical properties, and supports efficient tissue regeneration.

Notes: Artelon FlexBand is approved to augment, but not replace the anterior tibiofibular ligament (ATFL).

SURGICAL PROCEDURE

STEP 1: A lateral incision is made over the distal aspect of the fibula extending in a curvilinear fashion over the sinus tarsi (Figure 1). The superficial retinaculum is identified, mobilized, and retracted exposing the anterior lateral ankle joint capsule (Figure 2). The capsule is then incised allowing for direct visualization of the native ATFL (Figure 3). Debridement of the ATFL is then performed.

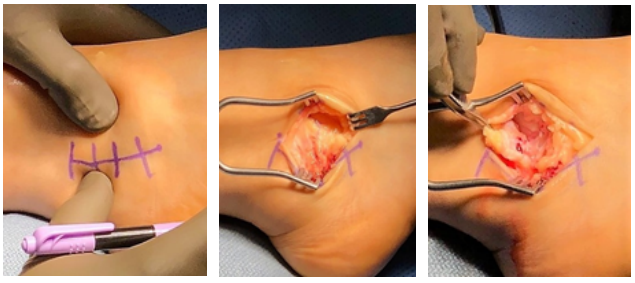

Figure 1. Placement of the incision over the distal fibula and sinus tarsi
Figure 2: Retraction of the extensor retinaculum showing the ankle joint capsule
Figure 3: Visualization of the diseased ATFL

REQUIRED IMPLANTS AND INSTRUMENTATION:

- 1 Artelon FlexBand (0.3 x 8cm)
- Drill bit (one 3.5 mm solid drill) 17mm deep
- Tap (4.75mm tap)
- 4.75mm PEEK interference screw x 2
- Looped passing needle - 1/2 needle with loop (Extra-Articular only)

STEP 2: Using the 3.5 mm solid drill bit osseous tunnels are created in the anterior face of the distal fibula as well as the lateral talus. The bone tunnel on the talus is best created just anterior to the distal edge of the lateral process. Ensure the drill entry is distal to the articulating cartilage. The drill is then angled 45 degree into the body of the talus and slightly superior. This will help to avoid violation of the subtalar joint. The drill is then advanced 17mm into the bone.

In the fibula, the 3.5 mm solid drill is used to create a tunnel 2.0 cm above the distal tip and on the anterior fibular surface.

A 4.75 mm tap is then used to prep the osseous tunnels. (Figure 4)

IMPORTANT: The osseous tunnels **must be tapped OR drilled to the screw size**. Failure to adequately prepare the tunnels will result in damage to the FlexBand Matrix.

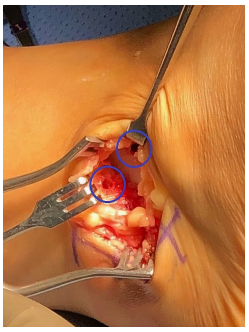

Figure 4: Osseous tunnels are created in the fíbula and talus.

STEP 3a: After soaking in normal saline solution, a 0.3 x 8cm Artelon FlexBand is presented and suture tails are added to both ends to facilitate passing and tensioning through the bone tunnels.

The FlexBand is then inserted in the distal aspect of the fibula and secured in place with an interference screw (i-screw) (Figure 5).

IMPORTANT: PEEK interference screws are recommended for best results.

With the ankle joint placed into a neutral position with mild eversion, the unsecured end of the FlexBand is loaded into the interference screw and directed toward the talus. A surgical marker is used to mark where the FlexBand crosses the furthermost aspect of the osseous tunnel and denotes where to set the tip of the i-screw to achieve proper tension.

The FlexBand is then inserted into the osseous tunnel and secured into the talus with an i-screw. Tension of the graft is confirmed with a hemostat (Figure 6) and an anterior drawer test is performed to evaluate stability. If needed, the FlexBand may be re-tensioned at this time. Once stability is confirmed, the FlexBand is then cut flush to the anchor/i-screw with a scalpel.

Optional: Start with inserting the FlexBand into the talus and then advancing to the fibula. Tensioning and associated steps follow same protocol as fibula to talus.

STEP 4a: A traditional Bröstrom is then performed with a vest over pants suture fashion advancing the ankle joint capsule over the intra – articular repair. The extensor retinaculum is then advanced over the Bröstrom repair.

A layered closure is performed via surgeon preference.

Figure 5: Insertion of the FlexBand into the distal fibula and loaded into the anchor/i-screw

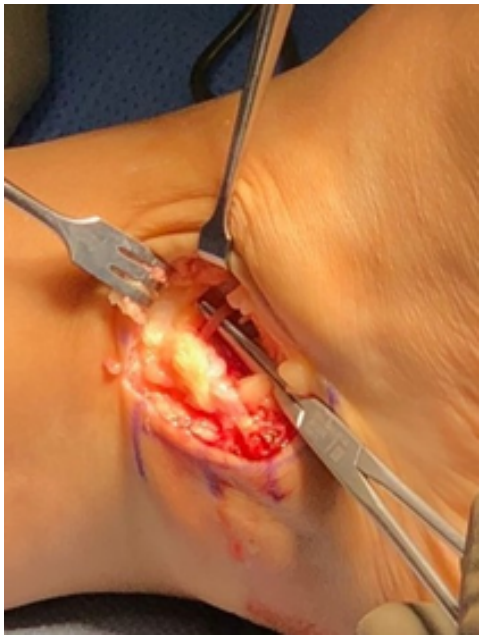

Figure 6: Tension of the FlexBand is then evaluated for appropriate stability

DYNAMIC LATERAL ANKLE STABILIZATION TECHNIQUE UTILIZING ARTELON® FLEXBAND™ TECHNOLOGY

Described by Ryan T. Scott, DPM, FACFAS. (Phoenix, AZ)

Figure 5: Use of ½ passing needle from intra-articular to extra-articular through the capsule

Figure 6: Pulling the Artelon FlexBand extra-articular for tensioning after the Bröstrom

Figure 7: Vest over pants suture showing advancement of ankle capsule.

Figure 8: Creation of the osseous tunnel in the distal fibula

Figure 9: Evaluating the tension of the Artelon FlexBand

Figure 10: Final construct demostrating the extra-articular FlexBand construct for lateral ligament reconstruction

STEP 3b: After soaking in normal saline solution, a 0.3 x 8cm Artelon FlexBand is presented and suture tails are added to both ends to facilitate passing and tensioning through the bone tunnels.

The FlexBand matrix is then inserted into the talus and secured in place with an i-screw.

IMPORTANT: PEEK interference screws are recommended for best results.

Using the looped passing needle, the FlexBand is advanced through the ankle joint capsule (Figure 5). With the ankle joint placed into a neutral position with mild eversion, a traditional Bröstrom is then performed with a vest over pants sutures advancing the ankle joint capsule (Figures 6 & 7). The extensor retinaculum is then brought over the Bröstrom repair.

STEP 4b: The 3.5mm drill is then used to create an osseous tunnel in the anterior-lateral aspect of the distal fibula. The drill is advanced 17mm. The tap is then used to finish the preparation of the osseous tunnel (Figure 8).

The unsecured end of the FlexBand is then loaded into the interference screw and directed toward the fibula. A surgical marker is used to mark where the FlexBand crosses the furthermost aspect of the osseous tunnel and denotes where to set the tip of the i-screw to achieve proper tension.

The FlexBand is then inserted into the osseous tunnel and secured into the fibula with an i-screw. Tension of the graft is confirmed with a hemostat (Figure 9) and an anterior drawer test is performed to evaluate stability. If needed, the FlexBand may be re-tensioned at this time. Once stability is confirmed, the FlexBand is then cut flush to the anchor/i-screw with a scalpel (Figure 10).

A layered closure is performed via surgeon preference.

Described by Ryan T. Scott, DPM, FACFAS. (Phoenix, AZ)

POST-OPERATIVE CARE

Post-op bandaging can be modified according to the surgeon's preference. A compressive ankle dressing and cam walking boot are applied immediately post-op.

Following the procedure, patients are instructed to rest and elevate for at least three days, limiting their activity to bathroom privileges only. Non-weight bearing activity is advised during the first 7-10 days, with range of motion and weight bearing being dictated by incision healing. Once the incision is appropriately healed, full weight bearing in the cam walking boot is permitted. The patient will be able to take the boot off during all sedentary activity. Formal physical therapy is initiated at 4-weeks post-op. At 6-weeks, patient is transitioned into an ASO ankle brace and allowed to resume normal activity with pain to tolerance. At 10-weeks, patient returns to regular footwear without the ASO brace.

2252 Northwest Pkwy SE, Suite G, Marietta, GA 30067
800.610.3446 customerservice@artelon.com

4000049 Rev. B