**INTRODUCTION**

Fourteen percent of patients require re-operation following a Brostrom anatomical augmentation. Six percent are secondary to athletic injuries. Failure has been noted to occur in patients with poor tissue quality, generalized ligamentous laxity, patients with longstanding instability greater than ten years, or due to a deformity that was not initially addressed.

After failed anatomical lateral ankle stabilization procedures, tenodesis procedures have been described.

In our experience, a modification of the Watson-Jones reconstructive procedure utilizing the split peroneus longus is effective and is a reliable limb salvage procedure after a failed anatomical reconstruction.

**METHODOLOGY**

A retrospective chart review is performed on 18 patients that underwent a modified Watson-Jones lateral ankle reconstruction after a failed anatomical repair. The surgeries were performed by one primary surgeon (MJN) between January 2001 and August 2017.

The operative technique is described.

The various adjunct procedures (deftoid ligament repair, syndesmotic repair, brostrom augmentation) are noted. Clinical notes and radiographs are reviewed.

Patient satisfaction scores with minimum 12-month follow-up utilizing the Foot and Ankle Disability Index (FADI) are obtained.

**SURGICAL TECHNIQUE**

1. A 10-12 hole incision is made from the proximal posterior talus to the posterior talus. Incising anterior talus is done in the distal 5th interosseous fossa. Harvesting the peroneus longus subgalea using the entire length of the peroneus longus tendon and 25% of the tendon. Modified strip stitch performed with Kinesio.

2. An anterior to posterior bone tunnel is made approximately 2.5-3.0 cm from the anterior tip of the fibula. Another tunnel is made anterior to posterior subcutaneous approximately 1-2.5 cm from the tip of the fibula.

3. A slightly oblique dorsal to plantar bone tunnel is made in the talus neck middle line and in the anterior neck of the talus.

4. With aseptic technique, the peroneus longus tendon is passed from posterior to anterior to the proximal fibular drill hole. The tendon is then passed underneath the skin undermining the lateral malleolus toward the lateral neck drill hole.

5. The tendon is passed superiorly to inferriorly through the talus neck hole utilizing a suture passer.

6. While passing the foot in dorsiflexion and slight eversion, the tendon is passed through the distal talus hole anteriorly to posteriorly, then sutured back onto itself utilizing non-absorbable ethibond 4-0 suture.

7. Inclusion of four weeks post-Watson Jones procedure.

8. Post-operatively, patients are placed in a posterior splint dorsiflexion and everttal.

9. For one week postoperatively, the ankle is protected.

10. At four weeks postoperatively, the ankle is gradually progressed to full weight bearing.

**RESULTS**

Of the 18 patients that met the inclusive criteria, there are 12 males, 6 females with an average age of 28 (16-41). Five patients included a modified brostrom augmentation in all 18 (100%), Dwyer calcaneal osteotomy in three (16%), deltoid ligament repair in one (5.6%), synostotic repair in one (5.6%), subtalar joint arthrodesis in one (5.6%).

Patient satisfaction surveys a minimum one year postoperatively were performed via telephone. Five (27.8%) of patients participated in the survey. Surveys demonstrate an average FADI score of 87.20/100, overall good satisfaction with the procedure. No ankle joint narrowing on radiographs was noted. Per clinic reports, no loss of peroneal muscle strength and no disruption in normal gait were clinically detected in any of the patients.

**PROCEDURE RATIONALE AND CONSIDERATIONS**

The traditional Watson Jones is described utilizing the entire peroneus brevis tendon, leaving it’s distal insertion intact. Several modifications have been described. Harvesting the longus tendon allows for greater length of the allograft and less fraying of the fibers as compared to the brevis tendon, allowing for easier tubularization and bone tunnel passage.

When addressing an unstable lateral ankle, concomitant biomechanical deformities such as calcaneal varus, subtalar joint instability, Achilles tendon rupture, equinus deformity, external rotation, forefoot valgus prefoot and euvalue should be evaluated and addressed.

Associated injuries such as osteochondral lesions, sinus tarsi syndrome, peroneal tendinopathy, or subtalar joint instability should also be evaluated and addressed.

In chronic ankle instability, direct primary ligament repair is the first choice of procedures. After failed anatomical lateral stabilisation, tenodesis reconstructive procedures should be considered. Favorable results utilizing the Watson Jones have been documented, ranging from 72% to 93% success. In the hands of the Senior Author, the modified Watson Jones technique has favorable results.

This procedure should be regarded as a limb salvage procedure in the face of chronic ankle instability or failed direct primary ankle, ligament reconstructive repair. Risks of include wound healing complications, dehiscence, ankle stiffness, nerve entrapment, and scarring. In this study, patient satisfaction scores following the modified Watson Jones lateral ankle stabilization procedure are favorable.

**REFERENCES**


