The Modified Watson-Jones Technique for Lateral Ankle Stabilization Utilizing the Split Peroneus Longus: a Retrospective Review of Patient Satisfaction Scores

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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 anatomic 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 anatomic reconstruction.

METHODOLOGY

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

The operative technique is described.

The various adjunct procedures (deltoid 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

Figure 1: A 15-18 inch incision is made from the proximal posterior lateral leg along the peroneal tendons to behind the fibula, incurvating anterior distal to the dorsal 4th metatarsal base. Harvesting the peroneus longus autograft using the entire length of the peroneus longus tendon and 25% width of the tendon. Modified whip stitch performed with fiberwire.

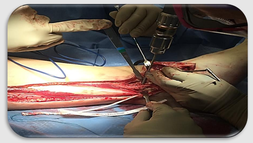

Figure 2: An anterior to posterior bone tunnel is made approximately 2.5-3.0 cm from the distal tip of the fibula. Another tunnel is made anterior to posterior obliquely approximately 1-1.5cm from the tip of the fibula.

Figure 3: A slightly oblique dorsal to plantar bone tunnel is made in the talus neck midline and in the inferior neck of the talus.

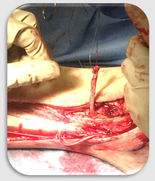

Figure 4: With a suture passer, the peroneus longus tendon is passed from posterior to anterior in the proximal fibula drill hole. The tendon is then passed underneath the extensor retinaculum of the lateral ankle toward the talar neck drill hold.

SURGICAL TECHNIQUE

Figure 5: The tendon is passed superiorly to inferiorly through the talar neck hole utilizing a suture passer.

Figure 6: While placing the foot in dorsiflexion and slight eversion, the tendon is passed through the distal fibula hole anteriorly to posteriorly, then sutured back onto itself utilizing non-absorbable ethibond #2 sutures.

Figure 7: Incision four weeks status-post Watson Jones procedure.

Post-operatively, patients are placed in a posterior splint dorsiflexed and everted. One week post-operatively, the splint is removed and the patient is placed into a non-weightbearing below knee cast for an additional three weeks. After four weeks, sutures are removed, and the patient is partial weightbearing in a cast or removable walking boot for an additional three weeks. Gradual introduction to weightbearing into a shoe with an ankle brace is then initiated. At two weeks post-operatively, physical therapy is initiated.

RESULTS

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

Patient satisfaction surveys a minimum one year post-operatively were performed via telephone. Five (27.8%) of patients participated in the survey. Surveys demonstrate an average FADI score of 87.2/100, 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 or arthritis, limb length discrepancy, equinovarus deformity, adductus foot, pronated forefoot but 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.

CONCLUSION

In chronic ankle instability, direct primary ligament repair is the first choice of procedures. After failed anatomic lateral stabilization, 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 anatomic ligament 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.

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