

FUNCTIONAL TREATMENT OF THE LATERAL ANKLE LIGAMENT INJURY

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INTRODUCTION

Lateral ankle ligament sprains are one of the most common injuries seen in emergency room facilities, as well as in the office setting of a podiatrist. It is estimated that one ankle sprain occurs per 10,000 people per day. In some studies lateral ankle sprains have been reported to account for as many as 25% of acute injuries to the musculoskeletal system. In addition, the ankle is the most commonly injured joint during athletic competition; and sports such as basketball and soccer have a particularly high incidence. Although in some rare instances surgery is considered, conservative management is the mainstay of treatment. There is only one relatively recent, controlled study that has shown superior results utilizing surgical intervention for acute management of lateral ankle ligament injuries. It is a commonly cited study, and therefore the results and implications of this study will be detailed below. A number of articles advocate utilizing functional treatment of acute lateral ankle ligament injuries. It is the author's intent to discuss what this means, and what the literature states regarding this treatment modality.

CLASSIFICATION

The most common mechanism of injury involves supination and adduction of a plantar flexed foot. In this position the anterior talofibular ligament is under significant strain. A number of systems have been reported to grade ankle ligament injuries. One common system uses the following nomenclature. A grade 1 injury is a mild stretching of the anterior talofibular ligament with no instability. A grade 2 injury involves a partial rupture of the anterior talofibular ligament with mild instability of the joint. (Some studies also classify a complete isolated rupture of only the anterior talofibular ligament, but without injury to the calcaneal fibular ligament as a

grade 2 injury). A grade 3 injury denotes complete rupture of both lateral collateral ligaments with gross instability of the joint.

Clinicians realize that when evaluating an acute injury, (without expensive and more often than not unnecessary diagnostic tests such as MRIs or arthrography) accurate grading can at times prove difficult. For instance, when there is significant swelling and ecchymosis around the joint, it is difficult to know whether or not, or to what degree the calcaneal fibular ligament has been damaged. There is usually too much pain and guarding to perform meaningful anterior drawer and talar tilt testing, (without first anesthetizing the joint which most clinicians do not perform). Also, in dealing with patients that have had significant lateral ankle ligament injuries in the past, there is typically less swelling, pain, and ecchymosis in acute injury as compared with a patient who experiences a first-time injury. In reality, differentiating between an acute grade 2 and 3 sprain is probably of little clinical significance. The literature does not conclusively prove a worse prognosis for a grade 3 versus grade 2 acute lateral ankle ligament injury. Furthermore, there is no predominance of literature that recommends routinely operating on a grade 3 sprain and treating a grade 2 sprain conservatively. Therefore, in most instances the initial management of both grade 2 and a grade 3 injuries is the same.

TREATMENT

The 3 main categories for treatment of acute lateral ankle ligament injuries include operative treatment, conservative treatment with cast immobilization, and functional treatment. As indicated earlier, very few clinicians routinely operate on an acute lateral ankle ligament injury. Exceptions are sometimes made when dealing with a highly competitive athlete, or in an individual who suffers an acute lateral ankle ligament injury who also has a history of chronic instability. Although we are all familiar

with casting, functional treatment can be understood to mean a number of different types of treatment. In the literature, functional treatment implies institution of an early mobilization program and also involves the use of an external support. This may include an elastic bandage or some type of ankle brace/support that will allow some joint motion. Physical therapy with coordination training is also a part of this type of treatment.

CONSERVATIVE TREATMENT

A thorough review of the literature shows a wide variety of treatment variations for acute lateral ankle ligament injuries. Comprehensive reviews of the literature show statistically significant differences in favor of functional treatment as compared with cast immobilization for the treatment of acute lateral ankle ligament injuries. These studies considered the time elapsed prior to returning to support and to work. Also fewer patients exhibited chronic swelling at short-term follow-up. Fewer patients had objective mechanical instability as measured by stress radiographs. Overall, patients treated functionally reported a higher satisfaction rate. Functional treatment implies that some support is given to the ankle but the joint still has some motion available. This is in contrast to cast immobilization, which will not allow the joint to move.

SURGICAL INTERVENTION

There is a relatively recent well controlled study that evaluated comparative outcomes for surgically-versus conservatively-treated patients, that the reader should be aware of. This randomized prospective study conducted by Pijnenburg et al involving 370 patients was performed to compare functional conservative treatment with operative treatment of acute lateral ankle ligament injuries. Patients were included in the study if they showed a positive delayed physical examination (5-7 days post injury) or a leakage of contrast medium from an arthrogram. Functional treatment consisted of the patient being treated with a nonweightbearing cast for 5 days followed by wrapping of the ankle with an ace type bandage (or taping) for 6 weeks. All patients underwent a supervised program of rehabilitation. The first week consisted of methods to reduce swelling and instructions on range of

motion exercises. During the second week, range of motion exercises were increased and coordination exercises were begun. During the third through the sixth week patients were trained on a wobble board and then a trampoline along with isometric exercises in an attempt to improve proprioception as well as strength. After this regimen was completed patients were encouraged to return to their normal sporting activities as the physical therapist felt appropriate.

This study showed that operative treatment yielded a better long-term outcome with regards to residual pain, and chronic instability. However, the authors of the study clearly indicate that even in spite of these results, the decision to operate on all acutely injured ankles is questionable. Previous studies have indicated a satisfactory outcome for operative treatment when delayed reconstruction is performed, even years after the initial injury has occurred. Therefore, taking into consideration the risks and costs of surgery, conservative treatment is recommended initially. If the patient eventually has chronic instability, then delayed reconstruction would be considered at that point.

METHODS OF FUNCTIONAL TREATMENT

Initially, the goal is to reduce pain and swelling. A typical method for accomplishing this is by the application of a Jones compression dressing. A posterior splint or cam Walker boot is also applied and is to be worn throughout the day. In the evening, the splint (or boot) is removed and the patient is instructed to perform gentle sagittal plane range of motion exercises. In addition, nonsteroidal-antiinflammatory drugs and ice can be utilized to help reduce pain and swelling. Also, crutches can be prescribed for pain management while weight-bearing is difficult. This routine is carried out for the first week. At the beginning of the second week, the patient is seen in the office and the Jones dressing is removed. Generally, at this point, pain and swelling have subsided to the degree that the examiner could perform stress radiographs if he or she were so inclined. The patient is then converted to a slip-on elastic type Ace bandage and an external support type of brace (e.g., Air cast, Omni Multiphase, Sweedo, etc.). The range of motion exercises are continued at home and weightbearing

is allowed. This is continued from the beginning of week 2 through the end of week 3. At the beginning of week 4 the patient can be sent to a physical therapy department for formally supervised rehabilitative exercises and proprioceptive retraining. This is generally continued for 3 weeks.

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