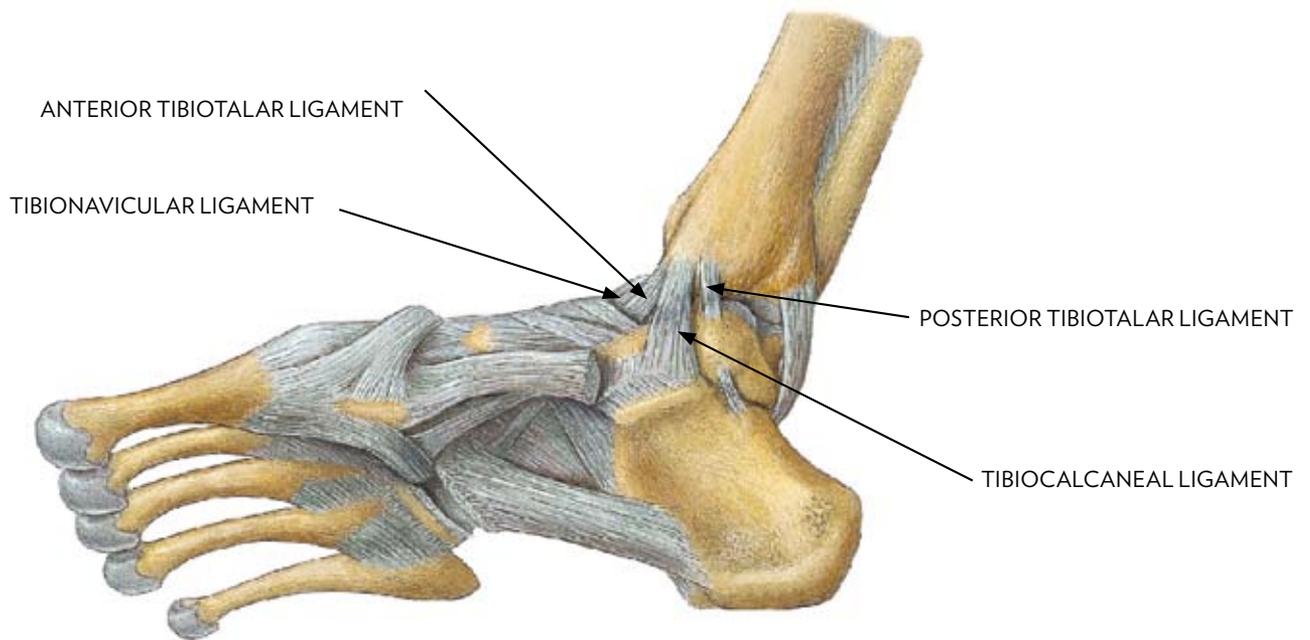


essential skills

BY BEN E. BENJAMIN



MEDIAL ANKLE SPRAINS



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In an earlier article [“Lateral Ankle Sprain,” January/February 2008, page 110], we looked at lateral ankle sprains—swelling and/or tearing of the anterior talofibular, posterior talofibular, and calcaneofibular ligaments. These are the most common ankle injuries. However, ankle sprains can also affect the deltoid ligaments, which support the medial arch of the foot.

These comprise a fan-shaped complex of four ligaments attaching the lower half of the medial malleolus to the talus, calcaneus, and navicular bones. When one or more of these bands is torn, the pain may be felt directly below the medial malleolus or slightly anterior or posterior to this structure. Complete ruptures of these ligaments are extremely rare.

HOW DO THESE INJURIES OCCUR?

It’s easy to picture accidents that cause lateral ankle sprains, but medial ankle sprains are harder to visualize. This type of injury is caused either by slow wear and tear over a long period of time, by an awkward fall or accident, or by a blow to the outside of the leg that

causes the ankle to collapse inwardly. In the hours following the injury, swelling and pain increase and walking becomes very painful. Because the ligaments commonly distend, stiffen up slightly, and become more brittle with age, this sprain occurs more frequently in middle-aged and older individuals than in young people.

In some people the deltoid ligaments stretch out over time, causing the arch of the foot to collapse. This sets the stage for injury to occur not only in the foot and ankle, but also in the knee, and sometimes the hip. In these cases, a treatment that tightens the ligaments may be useful to provide longer-term pain relief and prevent future injuries.

INJURY VERIFICATION

In testing for a deltoid ligament sprain, remember that there is no referred pain in the foot. Therefore, the location of the pain is usually a good indication of the injury site. If you are skilled in locating and palpating the anatomical structures of the ankle, you will have very little difficulty determining which structures are damaged and need attention.

ASSESSMENT TEST: PASSIVE PRONATION

Sit in a chair at the foot of the table. With the client's foot in dorsiflexion, lock your fingers together, grip the forefoot, and then passively pronate the foot; if there is no pain, give a slight medial twist at the end of the range of movement. The foot must remain in dorsiflexion the entire time. In cases of deltoid ligament sprain, this should cause discomfort.

Keep in mind that a deltoid ligament sprain can easily be confused with an injury to the posterior tibialis tendon, which passes behind and under the medial ankle and causes a similar pain when sprained. In a client with this injury, resisted inversion will reproduce the pain.

ASSESSMENT TEST FOR THE POSTERIOR TIBIALIS TENDON: RESISTED INVERSION

Place your lateral hand under the client's heel for support and your medial hand on the inner arch just proximal to the toes. Then, ask the client to forcefully push medially as you resist with equal force. (For this test, it doesn't matter whether the foot is in dorsiflexion or plantar flexion.)

PASSIVE PRONATION



RESISTED INVERSION



TREATMENT CHOICES

SELF-TREATMENT

In any case of ankle sprain, the person should immediately stop strenuous activity, elevate the leg, and apply ice to the ankle. It's also important to get to a doctor quickly to rule out a more serious injury, such as a broken bone or complete rupture of the ligaments, which would require further medical intervention. As soon as the person can move the ankle, the foot should be continually exercised by flexing, pointing, and moving the foot circularly in both directions many times throughout the day. Performing these exercises will help prevent scar tissue adhesions from forming. Daily ice treatments can also help speed recovery. Only when the pain subsides to a mild discomfort should any distance walking be resumed.

Another important aspect of self-treatment is using arch supports, which may be purchased from a drugstore. To be effective, the devices must be comfortable and must provide enough height and support to immediately reduce the pain felt on walking. They should always be used as a pair—changing the position and alignment of both arches—so that the client stays balanced. If no suitable arch supports are available over the counter, have the client see a podiatrist to be fitted for orthotic devices. It may also be possible to find athletic shoes with adequate height and support built right in; New Balance #550s and #998s are made at just the right incline for most people. It is important to maintain continuous arch support for about three months, since each unsupported step places a great deal of stress on the deltoid ligaments. Before the ligaments are fully healed, walking barefoot or in slippers can very easily tear newly formed ligament fibers.



When performed by a trained therapist, deep massage is an effective auxiliary treatment for mild to severe cases of medial ankle sprain.

In some mild cases of medial ankle sprain, self-treatment is fully effective. With luck and care the client may resume moderate athletic activity after three or four weeks, so long as the activity does not cause pain. After three months, the client can begin to use the ankle without the arch support; provided that this causes no pain, the support can gradually be phased out.

MEDICAL TREATMENT

In most cases, ankle sprains do not heal well without some treatment. With any moderately serious sprain, it is important for the person to be under the care of a physician and treated with massage and friction therapy.

Deep Massage and Friction Therapy
When performed by a trained therapist, deep massage is an effective auxiliary treatment for mild to severe cases of medial ankle sprain. Massage applied directly to the foot, ankle, and leg can reduce the swelling and help increase the flow of fresh blood to the injured area. Gentle effleurage may be started soon after the injury occurs.

Treatment is markedly more effective when massage is combined with cross-fiber friction of the damaged ligament(s). In recent sprains, friction therapy stimulates healing while preventing unwanted scar tissue from forming; in chronic sprains, it helps to eliminate the malformed scar tissue. Because scar tissue begins to form within minutes after an injury, prophylactic treatment can theoretically begin the same day the injury occurs. However, unless the therapist has a great deal of experience in treating ankle sprains, I recommend waiting at least 72 hours before initiating friction therapy. In the first several days after an injury, two or three well-placed friction strokes can help to prevent adhesions from forming. But if done too harshly or for too long, friction can interfere with the normal healing process. In most cases, a person is not seen for several weeks or more after a sprain has occurred.

Location and Friction of the Deltoid Ligaments

With the client lying supine, place your thumb beneath the medial malleolus so that it is simultaneously touching the tibiocalcaneal ligament and the bone to which it is attached. Apply friction by compressing the attachment of the ligament up onto the underside of the base of the medial malleolus. From there, you can move slightly anteriorly to work on the anterior tibiotalar ligament and tibionavicular ligament and move posteriorly to work on the posterior tibiotalar ligament. You may also treat injured fibers along the length of each of the ligaments to their bony attachments below. Depending on which ligament you're working on, you will be moving in an anterior-posterior direction (for the medial and posterior portions) or a medial-lateral direction (for the most anterior portion).

If only one of the deltoid ligaments is sprained, work on it for approximately 10 minutes, taking a brief rest after about five minutes. If several ligaments are sprained, spend two or three minutes at each of the injured spots and come back to each spot two or three times. At the beginning of treatment, it is most effective to see the client two or three times a week. After three or four weeks, as the ankle begins to heal, slowly scale down the frequency of the visits. If your treatment is successful, swelling should reduce quickly because it is only a secondary reaction to the ligament damage. Other signs of improvement are decreased pain while walking and exercising the foot, more normal range of motion, and decreased pain during friction therapy and during passive pronation.

FRICION OF THE TIBIOCALCANEAL LIGAMENT



Injection

Physicians who are specialists in orthopedic medicine offer two different types of injections that may be helpful in treating medial ankle sprains. A skillful injection of corticosteroids can relieve pain and swelling within three to five days. However, this treatment is effective only when all the sprained fibers are injected. If any fibers are missed, the pain will return. Even when a corticosteroid injection is performed successfully, the client must wear an arch support for two to three weeks.

Some serious sprains cause the deltoid ligament fibers to become permanently stretched and lengthened, making them vulnerable to reinjury. In these cases, a series of proliferant injections can be useful in tightening and strengthening the ligaments.

EXERCISES

A targeted exercise program is critical to the effective healing of any ankle sprain. Circling, flexing, and pointing the ankle helps to maintain a full range of motion while preventing adhesive scar tissue from forming. Strengthening exercises for the foot, shin, and calf muscles help to increase the stability of the ankle. (Movements of the foot and ankle are primarily controlled by the muscles of the shin and calf.) Each of the following exercises should be performed daily.

Ankle Circles

While sitting in a chair, cross the injured leg over the uninjured leg. Rotate the foot in as wide a circle as you can, both clockwise and counterclockwise. Begin with 10 circles in each direction and build up to 50.

Ankle Flexion

Sitting in a chair with the injured leg crossed over the uninjured leg, flex the ankle so the toes come toward the knee. Hold the flexion for one or two seconds, then point your toes and hold the point for one or two seconds. Begin with five repetitions of flexing and pointing, and then rest. Over time, build up to 30 repetitions.

Heel Raises

Stand with your feet parallel and hold on to something for balance. Without bending your knees, rise up onto the balls of your feet. Stay there for a moment and then come down again. After five repetitions, repeat this exercise with the knees slightly bent. Build up slowly to eight sets of five.



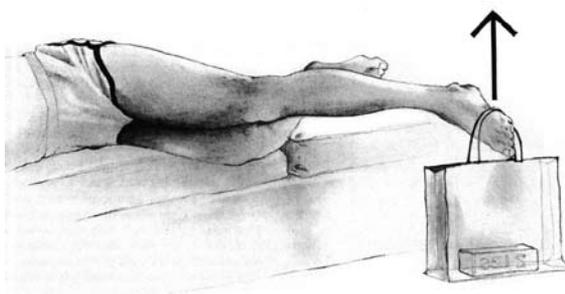
Inner-Ankle Lift

You'll need some props for this exercise. You can use weights that attach directly to the foot or use a small plastic shopping bag containing a small weight. (Use one to five pounds to start.) Sitting in a chair, cross the injured leg over the uninjured leg with the weight apparatus or the loaded shopping bag across the front part of the foot, just behind your toes. Now raise the foot toward the ceiling five times. Repeat after a brief rest. Gradually build up to three sets of 10 repetitions.



Outer-Ankle Lift

This exercise requires the same props as the Inner-Ankle Lift. Lying on your side on a couch or bed with your knees bent and the injured ankle on top, extend the top leg off the edge of the couch or bed. Now, wearing the weight or the shopping bag, lift the outside of the foot toward the ceiling. Do this exercise 10 times with the foot pointed, and then repeat with the foot flexed. Build up slowly to three sets of 10 repetitions in both foot positions.



APPLYING YOUR KNOWLEDGE AND SKILL

Although medial ankle sprains are less common than lateral ankle sprains, serious injuries can occur in this area—particularly in middle-aged and older individuals. In addition to causing chronically recurring pain, these injuries can lead to lasting instability that increases the risk of future injuries. Massage therapists have an important role to play in treatment. By performing deep massage, we can help increase blood flow to the injured areas; by applying friction therapy, we can help break up poorly formed adhesive scar tissue; and by teaching a targeted exercise program, we can help maintain a full range of motion in the ankle and prevent future injuries. Perhaps our greatest contribution is our ability to provide accurate, detailed information about this injury. When we can give clients a clear understanding of which structures are affected and all the treatment options available to ease their pain, we empower them to make well-informed decisions that will restore their health and mobility. **m&b**

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