

Ankle Injury

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Ankle Sprain - Complications & Differential Diagnosis

With moderate to severe ankle sprains, isolated lateral ligament injury is rare. There is usually some degree of joint or other soft tissue trauma. Some of the most common examples are described below.

Medial Joint

When inversion injury stretches lateral tissues, it invariably compresses those medially. Chondral or osteochondral injury may result. The deltoid ligament is also vulnerable to a crush injury, particularly postero-medially, as most sprains involve plantarflexion and inversion. When the sprain involves an eversion mechanism (often with plantarflexion or pronation), the deltoid ligament may be torn, particularly the anterior (tibiotalar) component. As this is a more significant injury, it will often involve damage to other structures, such as the lateral ligament or inferior tibiofibular joint (see below). Such an injury may require a degree of immobilization, usually a CAM boot for 4 to 6 weeks.

Inferior Tibiofibular Joint

Syndesmosis injuries are common, representing up to 20% of all ankle sprains. The usual mechanism is external rotation of the talus on the tibia/fibula, often in a degree of dorsiflexion. This is seen frequently in collision sports, particularly rugby league. A significant eversion injury, resulting in deltoid ligament rupture, can also affect the syndesmosis.

Plain weight-bearing x-ray may demonstrate a diastasis – widening of the joint space, but is often equivocal. MRI will provide a clearer picture.

Surgical stabilization may be required when there is moderate to severe injury. A CAM boot follows this, or less severe injury, then graduated rehabilitation.

Fractures

The most common fractures associated with ankle sprains are base of 5th metatarsal, distal fibular, osteochondral (talar dome), anterior process of calcaneus (after bifurcate ligament injury), spiral fracture of the fibula (along with significant syndesmosis injury) and osteochondral injuries involving the navicular.

Subtalar joint sprain

This usually occurs in conjunction with lateral ligament injury, when the calcaneofibular ligament is ruptured. There may be a heightened feeling of instability, particularly on uneven surfaces. Treatment is usually conservative.

Tendon Injury

Inversion or eversion injuries can lead to partial tearing of peroneal or tibialis posterior tendons. These injuries are often associated with prolonged recovery.

References

- Bruckner P & Khan K (2012). *Clinical Sports Medicine*, 4th ed. McGraw Hill.
- Clayton, J (2017). Complications of an ankle sprain. *Sports Physio*, 2, 6-9.

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