

Ankle

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Low ankle sprains Background Ankle sprains are a common injury that can prevent athletes from competing. These injuries are prevalent in sports that involve cutting actions or uneven surfaces while running, such as basketball, rugby, soccer, football and trail running. The ankle primarily resists inversion through the lateral collateral ligament complex, which is composed of the anterior talofibular ligament (ATFL), posterior talofibular ligament (PTFL) and calcaneofibular ligament (CFL). The ATFL is the most frequently injured ligament in the complex; it attaches at the most distal aspect of the fibula and spans anteromedially to the lateral aspect of the talus to prevent inversion during it attaches proximal and posterior to the ATFL origin on the fibula and traverses posteromedially to the lateral aspect of the calcaneus. The position and orientation of the CFL results in resistance against inversion of the ankle while dorsiflexed. The PTFL is the strongest ligament in the complex and is rarely involved in ankle sprains.

History and physical examination - Patients with ankle sprains can often recall the injury and will report the feeling of the ankle inverting. Post injury, many patients will have swelling and bruising on the lateral aspect of their ankle, which can travel to a dependent position on their foot. Examiners should perform all examination manoeuvres on the contralateral and ipsilateral sides to assist in comparisons. The patient may exhibit tenderness to palpation at the lateral collateral ligament complex. The anterior drawer test can be used to evaluate for ATFL injuries. In this test, the ankle is placed into mild plantarflexion while a posterior force is applied to the distal tibia and an anterior translation force is applied to the calcaneus. This test is positive when there is excessive anterior translation of the talus on the tibia compared to the contralateral side. The talar tilt examination evaluates both the CFL and the ATFL. This test is performed with mild plantarflexion of the foot, followed by stabilisation of the distal tibia with one hand while the other hand places varus stress on the talus. Excessive tilt during this manoeuvre is indicative of ATFL injury, whereas CFL injury is indicated by excessive tilt when placing the foot in slight dorsiflexion with varus stress on the talus being applied. Imaging Radiographs of the ankle are indicated if the patient fulfils any of the Ottawa ankle rules (Table 36.1). Foot radiographs are obtained if the patient has tenderness at the base of the fifth metatarsal or at the navicular bone or if they are unable to bear weight on the foot. Typically, radiographs include weight-bearing AP, mortise and lateral views along with a talar tilt view. These can help rule out other pathologies that may be contributing to ankle pain, such as various types of fractures or osteochondral lesions of the talus. If the examiner is concerned about a high ankle sprain, an external rotation radiograph can be obtained. MRI is not a standard modality utilised in the evaluation of ankle sprains but should be obtained for patients with chronic ankle pain or instability to evaluate for osteochondral lesions of the talus, tendon injury, anterolateral impingement or tibiofibular syndesmosis injury.

Treatment Ankle sprains are often treated conservatively with rest, ice, compression and elevation. Athletes should limit

TABLE 36.1 Ottawa ankle rules. Bone tenderness along the distal 6 cm of the posterior margin or at the tip of the lateral malleolus Bone tenderness along the distal 6 cm of the posterior margin or at the tip of the medial malleolus Inability to bear weight at the time of the accident or at the time of examination

pain control, reducing swelling and proprioceptive exercises. Strengthening of the peroneal muscles and stretching can occur once the patient is able to tolerate bearing weight on the ankle. Consider supportive braces to further stabilise the ankle from inversion and eversion. Surgery is indicated in patients with persistent pain and recurrent ankle sprains. This can be achieved through anatomical reconstruction by imbrication of the attenuated ATFL with or without reinforcement using the 9 inferior extensor retinaculum. Several non-anatomical lateral ankle ligament reconstruction techniques have also been described for use in chronic ankle instability . The prognosis following an ankle sprain depends on the severity of the injury , but many patients are back participating in sports after a few weeks. Differential diagnosis /uni25CF Anterolateral ankle impingement. /uni25CF Peroneal tendon disruption. /uni25CF Fracture of the lateral talar process. /uni25CF Syndesmotic sprain. /uni25CF Osteochondral lesion of the talus. /uni25CF Malleolar fracture. /uni25CF Lateral process of the calcaneus fracture. Summary box 36.5 Low ankle sprains /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF

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Differential diagnosis

- /uni25CF Anterolateral ankle impingement.
- /uni25CF Peroneal tendon disruption.
- /uni25CF Fracture of the lateral talar process.
- /uni25CF Syndesmotic sprain.
- /uni25CF Osteochondral lesion of the talus.
- /uni25CF Malleolar fracture.
- /uni25CF Lateral process of the calcaneus fracture.

Summary box 36.5 Low ankle sprains

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