

Ankle Pain

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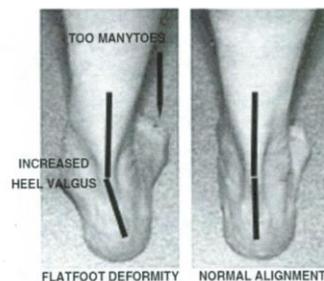


Posteromedial Ankle Pain - Differential Diagnosis & Treatment

One of the most common causes of medial ankle pain is **tibialis posterior tendinopathy**. This occurs as an overuse injury in sport, particularly in runners, and in older patients with a pes planus foot type. It is sometimes associated with an os naviculare (accessory navicular). Pain will generally be in the region of the navicular, extending to the posterosuperior border of the medial malleolus, and sometimes along the lower posteromedial tibial border. The pain may be reproduced by forced eversion and resisted inversion / plantarflexion. If there is associated tenosynovitis, there may be swelling and sometimes crepitus along the course of the tendon. Treatment may include ice massage over the tendon, prescription of orthotics or other arch support, releases to the muscular component in the deep posterior compartment, and graduated strengthening.

Tibialis posterior **tendon rupture** may occur acutely, or as a gradual degenerative tear. Palpation will reveal thickening or absence of the tendon.

There will be flattening of the medial arch, and the “too many toes sign” when observing from behind. The patient will demonstrate an inability to raise the heel on the involved side. Surgery will generally be required for tendon



rupture.

Posterior ankle impingement occurs secondary to overuse or after acute injury. It occurs more commonly when the patient has an enlarged posterior tubercle of the talus, or ‘os trigonum’. This can be confirmed with plain x-ray, including lateral views with the ankle in plantarflexion. The pain will be reproduced with over-pressure of ankle plantarflexion. It is most common in ballet dancers, gymnasts, high jumpers, footballers and hockey players due to repetitive forced ankle plantarflexion. In dancers the pain is often posteromedial, due to involvement of the **flexor hallucis longus (FHL)** tendon. This can be tested with plantarflexion combined with inversion, and with palpation of the posteromedial ankle and the region around the sustentaculum tali. There will be pain on toe-off or forefoot weightbearing, and on resisted 1st toe flexion, particularly in ankle dorsiflexion. Treatment may consist of massage to the muscle belly, ankle and subtalar joint mobilization, & specific FHL strengthening exercises.

Tarsal tunnel syndrome occurs due to entrapment of the posterior tibial nerve in the tarsal tunnel where the nerve winds around the medial malleolus. This can occur secondary to trauma, particularly ankle inversion injury, or due to overuse, particularly where there is excessive pronation. Symptoms may include sharp pain radiating into the heel, the arch, and sometimes the toes. There may also be paraesthesia in the sole. The pain will be aggravated by prolonged standing, walking and running. Examination includes

palpation and tapping over the posterior tibial nerve (Tinel's sign). Forced pronation will sometimes reproduce symptoms. Treatment options are orthotics, cortisone injection or surgery.

Osteoarthritis of the talo-crural or subtalar joint may result in medial ankle pain. There will generally be a history of variable symptoms. Flare-ups can be acute, leading to swelling and difficulty weightbearing. There will be joint line tenderness on palpation. X-ray, including weightbearing views, will confirm.

Acute ankle sprains can often lead to persistent medial ankle pain. This may be due to crush injury to the deltoid ligament, osteochondral injury, or post-traumatic synovitis.

Stress fractures may occur with overuse, particularly in runners. Suspect this if pain worsens with weightbearing. The most common sites are at the **navicular** or **calcaneus**. Less common sites are the **medial malleolus** and **talus**. Tenderness on palpation over the "N" spot for the navicular, and squeezing the heel from both sides for the calcaneus, may heighten suspicion. Investigation is by bone scan, CT or MRI. Navicular stress fractures are prone to non-union & so treated with strict non-weight-bearing for up to 8 weeks. For calcaneal stress fractures the non-weight-bearing period will be considerably shorter.

Plantar heel pain will often be associated with discomfort being felt medially. The differential diagnosis for 'plantar fasciitis' may be **medial calcaneal nerve entrapment** or any of the conditions described above. And of course the **lumbar spine** may refer pain or altered sensation into the medial ankle or any part of the foot.

For information for doctors on physiotherapy management of all types of injuries visit:

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