

How to manage fractures of the calcaneus

If you have working patients who have suffered fractures of the calcaneus, consider a conservative approach to treatment. The long-term prognosis with these fractures—particularly with regard to return to work—is usually associated with lengthy recovery and limited mobility, along with a possible need for reconstructive surgery.

Causes

Fractures of the calcaneus usually occur in young adults—males, more commonly than females. Injuries can result from either a fall from a height or involvement in a high-speed motor vehicle incident, where the foot comes into contact with the vehicle's interior. In such instances, the resulting axial force against the lower limb drives the talus into the calcaneus.

Classification

Extra-articular fractures include avulsion and stress fractures that do not involve the subtalar joint, and consequently offer a much better prognosis than fractures that involve the joint itself.

Intra-articular fractures result in the disruption of the subtalar joint. The long-term prognosis for these injuries depends on the extent of the calcaneus comminution and the degree to which surgical reconstruction can restore the joint and heel shape.

Assessment of the injury

Plain X-rays and a CT scan are usually used to assess the nature and extent of the bony injury. It's important to examine the patient for other injuries associated with calcaneus fractures,

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which include a 10% to 15% incidence of vertebra fractures.

Treatment and rehab

Where the fracture is undisplaced, or is a stress fracture due to overactivity, patients' nonoperative treatment will involve rest and limited activity. These activities should include exercises to maintain foot and ankle movement as far as it is possible, pool exercises to maintain fitness, and protected weight-bearing exercises.

The goal of surgical treatment is to restore, as far as possible, the anatomy of the heel and subtalar joint. Unless the fracture is open or the limb exhibits compartment syndrome, surgery may be delayed up to 3 weeks to allow swelling and any fracture blisters to subside.

The complications of surgery may include necrosis of wound edges, with the subsequent need to skin-graft the defects, wound infection, osteomyelitis, and failure of the internal fixation. Even with use of bone grafting, it may be difficult to achieve union in fractures with extensive comminution fixation.

Following surgery, the same rehabilitation principles apply as for patients who didn't require surgery. Nonetheless, postsurgical rehabilitation may be delayed, depending on the nature of the fracture and surgical procedure.

If a fracture is treated conservatively, patients should be encouraged to start protected weight-bearing, pool, and range-of-movement exercises as their symptoms lessen. The idea is to encourage early movement.

Prognosis

The prognosis for calcaneus fractures is mixed. Some patients with a well-constructed anatomy may have per-

sistent debilitating symptoms, whereas others with considerable residual deformity may have few complaints and manage to achieve a reasonable level of activity.

Patients with poor outcomes may consider reconstructive surgery. However, given the long period required to resolve symptoms and regain function, it is reasonable to wait a full 2 years before referring your patient to a specialist to consider reconstruction.

Recommendations¹

Surgeons will provide their surgical patients with a list of contraindicated activities. They may prescribe no weight bearing for up to 2 months. And, until the fracture is fully healed, they may also advise ongoing restrictions of activities that place a load on the injury, including limiting or eliminating walking, climbing stairs or ladders, or driving.

Patients may return to driving when protected weight bearing becomes comfortable. The duration of disability will depend on patients' job requirements and ability to perform duties while seated. Those with intra-articular or extensive fractures may permanently struggle with tasks requiring heavy work or proprioception for safety—such as ladder climbing or working at heights or on uneven ground.

For further information contact a medical advisor at your nearest WorkSafeBC office.

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Reference

1. Reed Group Disability Guidelines. Fracture, Calcaneus. Accessed 24 March 2014. www.mdguidelines.com/fracture-calcaneus.