

The Management of Closed Ankle Fractures



Background and rationale: Ankle fractures are common, and the goal of treatment is to restore and maintain stability and alignment of the joint, with normal anatomy of the ankle mortise. This should optimise functional recovery and reduce the risk of developing post-traumatic arthritis. **Inclusions:** Patients with closed malleolar and syndesmotic ankle injuries who are skeletally mature. **Exclusions:** Patients with pilon fractures and open ankle fractures.

Standards of Care

1. Reduction and splinting of clinically deformed ankles must be performed urgently within 2 hours after presentation after appropriate analgesia.
2. The mechanism of injury; clinical findings, including skin integrity, assessment of circulation and sensation; and comorbidities that may influence the choice of treatment and outcome should be documented in the patient's record. These include pre-existing mobility impairment, diabetes mellitus, HIV disease, peripheral neuropathy, peripheral vascular disease, osteoporosis, use of topical bleaching creams, smoking, and alcohol abuse.
3. Open fractures or those with vascular injury require urgent referral for definitive treatment.
4. Radiographs of the ankle should be obtained in those suspected of having sustained a fracture, including patients with bone tenderness within 6 cm from the tip of the lateral or medial malleolus, or if the patient is unable to weight bear (Ottawa ankle rules). Radiographs should be obtained promptly after presentation and after any reduction manoeuvres, with an AP, true lateral and a mortise view. If access to radiography is not immediately available, imaging should be performed within 24 hours of presentation. Additional whole tibia radiographs are required when clinical examination suggests a more proximal fracture of the fibula.
5. Review of the radiographs should confirm adequate reduction with the talus positioned below the tibia, on both the AP and lateral view without evidence of subluxation, if not reduced, further intervention is required.
6. Patients presenting for the first time 6 weeks or more after a displaced ankle fracture, should be considered for referral for a specialist opinion.
7. Patients should be given an explanation of their injury including the treatment plan and the expected outcome.
8. Patients with fractures considered stable, including fibula fractures below the syndesmosis, should be managed non-operatively with analgesia, and splinting if necessary, and weight bearing as tolerated. Further follow-up may not be necessary.
9. In patients with fracture patterns of uncertain stability, such as isolated fibula fractures at the level of the syndesmosis, the ankle should be splinted and reviewed within 2 weeks, with further radiographs with weight bearing, if possible, to confirm that the talus remains in position.
10. In patients with an unstable ankle fracture, which includes displaced medial malleolar fractures and fibular fractures above the syndesmosis, early surgical fixation is recommended as soon as safe and within 7 days of injury, or the decision to operate if stability was in question.
11. The WHO Surgical Safety Checklist must be completed, and a single dose of prophylactic antibiotics should be given at the start of surgery.
12. Surgery should achieve reduction and stabilisation of the ankle mortise. The syndesmosis should then be assessed and stabilised if unstable. Intraoperative fluoroscopic images or post-operative radiographs should be obtained within 48 hours and saved in the patient's record.
13. Patients should be allowed to fully weight bear as tolerated in a splint or cast at 2 weeks from fixation, unless there are specific concerns regarding the stability of the fixation or contraindications, such as peripheral neuropathy, or specific concerns about the status of the soft tissues.
14. The risk of VTE should be assessed according to local guidelines. If chemoprophylaxis is required, low-dose aspirin is recommended.
15. Patients should be given information about expected functional recovery, possible complications, and rehabilitation, including advice on return to normal activities. This should be in the patient's own language and/or in an illustrative pictorial format and should be available in both printed and digital formats.
16. Follow-up at 2 weeks is required for patients with concerns about stability or who have undergone surgery. Radiographs should confirm maintenance of reduction of the ankle mortise. Further follow-up should follow local policy but should ensure safe wound healing. Patients should be able to access advice or follow-up from the treating hospital if any complications occur.
17. All cases should be audited with documentation of the above standards including fracture reduction and reported complications. The audit should be presented at the departmental meeting. This should be performed quarterly and then annually once established.