

An alternative reduction and fixation technique for the treatment of medial open ankle fractures

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BACKGROUND

The development of open ankle fractures after pronation-external rotation manoeuvres typically occurs at the medial side, where they are located over the malleolus, and accompanied by a horizontal skin laceration (Fig 1) caused by the sharp edge of the fracture line. The traditional osteosynthesis method includes a longitudinal incision and surgeons may find reduction challenging. The horizontal laceration over the malleolus renders it impossible to perform osteosynthesis through the malleolus. However, the laceration is sufficiently wide to allow for reduction. In this technical note, we describe reduction via the laceration itself and medial malleolus fixation via an additional stab incision.

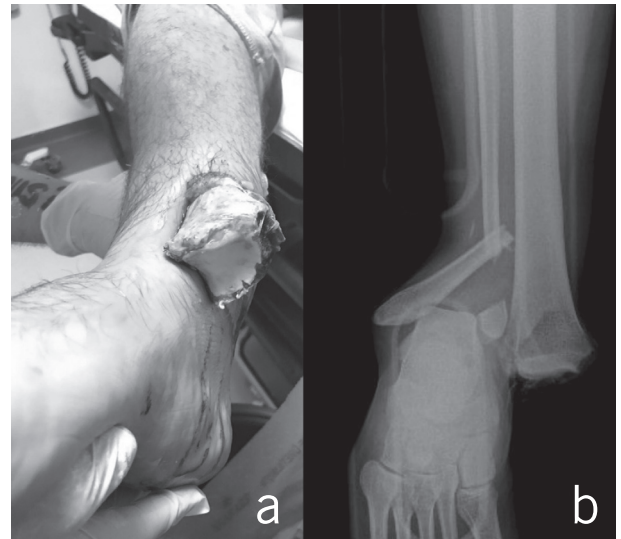


Figure 1 Pronation-external rotation open ankle fractures are typically medial in nature, located over the malleolus, and accompanied by a horizontal skin laceration (a). Anteroposterior radiograph of the fracture (b).

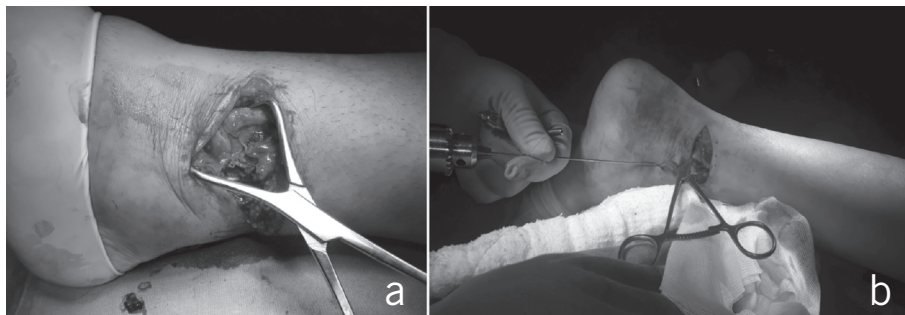


Figure 2 Reduction of the medial malleolus via the lacerated skin using a malleolus clamp. The patient can be supine (a) or prone (b). After reduction, fixation involves screw placement via a stab incision created below the malleolus.

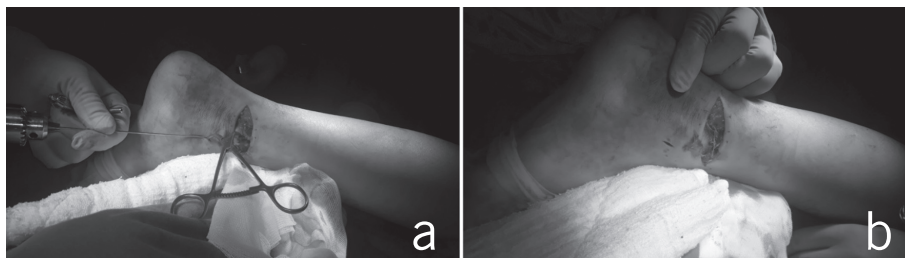


Figure 3 The horizontal laceration (a) and stab incision (b) before closure.

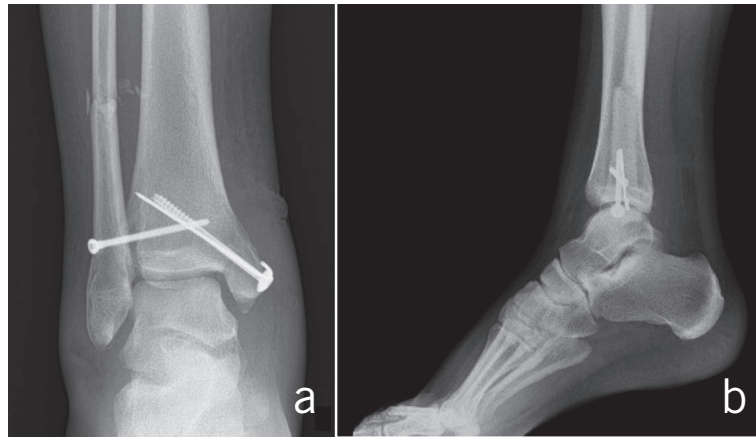


Figure 4 Postoperative anteroposterior (a) and lateral (b) radiographs indicate a successfully obtained reduction.

TECHNIQUE

This technique can be applied with the patient supine or prone. After debridement and standard open wound care, the lacerated area is exposed. Reduction of the medial malleolus fracture is achieved by inserting a malleolus clamp through the lacerated wound (Fig 2). After fluoroscopic checking, the reduction is secured with screw placement via a stab incision created below the malleolus (Figures 2b, 3 and 4).

DISCUSSION

Our technique features an incision created below an open medial malleolus fracture. It is possible to achieve reduction through the lacerated skin and to perform osteosynthesis by means of a stab incision.