COMMENTARY & PERSPECTIVE

Which Lateral Malleolar Fractures Do Not Need an Operation?


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The best and most cost-effective treatment of lateral malleolar fractures without talar displacement on presenting radiographs remains controversial. There is one thing that is not controversial: they do not all need an operation. But how do you decide? What assessments are necessary and what criteria should be used to help to make this decision? That is the controversy.

The articular cartilage of the ankle joint does not tolerate a wide mortise. The most common cause of a chronically wide ankle mortise is an unstable rotational ankle fracture healed in an incompletely reduced position. When this occurs, loss of cartilage, pain, and decreased function are predictable results. To minimize the risk of malreduction, most unstable ankle fractures are surgically reduced and the malleoli and syndesmosis are internally fixed as necessary to restore the mortise and to minimize talar instability.

There is good evidence that, after some lateral malleolar fractures, the mortise remains stable, the talus does not shift, and excellent outcomes result from simple treatment without a surgical procedure. Distinguishing between stable and potentially unstable ankle fractures has been the subject of a number of studies. These include studies on the value of the clinical examination and magnetic resonance imaging, but most of these studies have indicated that dynamic stress radiographs or weight-bearing radiographs, designed to directly demonstrate instability of the talus, are necessary. Different stress techniques have been described and controversy remains regarding how much shifting of the talus constitutes instability and the need for an operation.

In the article, “Dynamic Stress Testing Is Unnecessary for Unimalleolar Supination-External Rotation Ankle Fractures with Minimal Fracture Displacement on Lateral Radiographs,” Nortunen et al. propose that stress radiographs are not always necessary and that, in some fractures, there are radiographic signs of ankle stability on presenting radiographs that can be used to guide treatment decisions without performing stress radiographs. For the study, measurements made on the presenting radiographs of a large series of supination-external rotation ankle fractures that did not have talar displacement were correlated with ankle stability (or instability) assessed on stress radiographs.

Seventy-six percent of the ankles were stable, defined as <5-mm medial clear space widening on the stress radiographs, and 24% were unstable. Nortunen et al. found that in noncomminuted lateral malleoli, when there is posterior displacement of the fibula of <2 mm on the lateral view, the ankles were stable to stress testing. These findings occurred in nearly 30% of patients. According to this study, these patients can be predicted to have stable ankles on the basis of injury radiographs and do not need stress testing.

Clinicians should consider a couple of important points when incorporating these results into practice. First, <2-mm posterior displacement predicts a stable mortise, but many lateral malleoli with ≥2 mm of posterior displacement will have stable ankles on stress testing. Displacement by ≥2 mm of the fibular fracture on the lateral view should be used as an indication for a stress view and not for a surgical procedure. Second, the study design compares a radiographic measurement on injury radiographs with a radiographic measurement on a stress view, not with an important clinical outcome. A mortise shift of 5 mm on an external rotation stress view was used as a reference for ankle instability. Nortunen et al. correctly point out that there is insufficient evidence to know the medium or long-term prognostic value of this test or other tests of dynamic instability and whether the decision to operate or not, on the basis of this assessment, leads to the best patient outcome.

This study identifies a subset of patients with lateral malleolar fractures without talar displacement, for whom a simple radiographic assessment without dynamic stress testing should be safe and effective to determine that an operation is not necessary. This study does not help to identify which patients require surgical reduction and fixation for an optimal outcome.

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