

Percutaneous Pinning of the Fibula: A New Technique to Maintain Fibular Length With Temporizing Stabilization

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Purpose: High-energy trauma near the ankle frequently warrants external fixation prior to definitive fixation. Standard ankle-spanning external fixation does not directly restore fibular length, especially with Weber C fibular injuries. Restoration of fibular length at time of definitive fixation may be extremely difficult. We hypothesize that a novel technique of provisional percutaneous subcutaneous pinning of the fibula to the talar body will be a safe temporizing bridge to definitive fixation.

Methods: After restoration of tibial length of AO/OTA 44 or 43-C fractures, closed or percutaneous reduction (with a small pointed reduction clamp) of persistently shortened fibular fractures to restore length was performed. Once appropriate reduction was visualized on intraoperative imaging, two 1.6-mm smooth Kirschner wires (K-wires) are inserted from the distal fibula into the talar body. They are then cut and buried beneath the skin. A retrospective chart and radiographic review was used to identify 20 cases in which this technique was employed. Complications including infection, pin breakage, or loss of reduction were documented.

Results: 20 patients were identified and included in our study group and 18 went on to definitive fixation, when the pins were removed. (One patient was lost to follow-up prior to conversion to definitive fixation; another was primarily converted to ankle arthrodesis due to degree of initial injury comminution.) An external fixator was maintained in all patients until the buried K-wires were removed. There were no instances of breakage of the percutaneous pins prior to or at time of removal. There were no instances of infection at minimum 6 months of follow-up after injury.

Conclusion: Percutaneous pinning of the fibula to the talus is a safe temporizing technique to maintain fibular length when ankle spanning external fixation does not restore fibular length. No complications related to the technique were seen in any patient prior to pin removal and definitive fixation.

