Application of the Ilizarov Technique of Management of the Neurological Ankle Equinus

**PURPOSE**

Many methods exist for treatment of ankle equinus deformity, including surgical and conservative nonsurgical techniques. Selection of an appropriate treatment plan among these options requires consideration of the individual patient, etiology, and specific nature of the deformity. A single case of neurologic ankle equinus and varus deformity treated with application of the Sheffield external fixation device is presented. This approach allows for realignment of the lower extremity and the restoration of a stable limb that could be braced for proper function.

**METHODS**

This 29 year old female patient was treated with the Orthofix Sheffield Ring Fixator for management of a neurological ankle equinus. Following an ankle inversion injury, the patient was treated with cast immobilization that subsequently resulted in the development of a compression foot drop. Nerve conduction studies were consistent with moderately severe common peroneal nerve lesion. Contractures were appreciated in the entire posterior muscle group and posterior capsular attachments, as well as a varus deformity that involved the forefoot and rearfoot.

Treatment for this patient included application of the Sheffield ring multiplanar external fixation device, allowing for a gradual and independent correction of the equinus and varus deformities. No open incisions, traumatic surgical dissection, or even percutaneous tendon or capsular releases were required.

**RESULTS**

The gradual correction of this patient's deformities required three weeks of manipulation in the external fixation device, followed by an additional seven weeks for maintenance in the frame. Over-correction of the deformity was purposefully accomplished to prevent recurrence. The patient tolerated the treatment and responded well in follow-up. Restoration of lower extremity alignment was accomplished, along with development of a biomechanically functional and stable limb suitable for bracing.

**SIGNIFICANCE**

Treatment of severe ankle equinus and pedal varus deformities has often traditionally required multiple surgical procedures followed by a lengthy recovery in a non-weightbearing status. Using the Sheffield external fixator, excellent reduction is achieved with independent manipulation of the single device and no changes in weight-bearing status are necessary.