Statement of Purpose

Asymmetrical paralysis of the foot results in a prominent lean in spinal poliomyelitis following disease of the lower motor neurons of the anterior horn cells. Extensor contractures, equinus deformities with alterations in weightbearing leg shortening, soft tissue contractures including at the hip and knees, and a possible compartmental soft tissue envelope secondary to previous surgery or trauma can increase risk for cutaneous and neurovascular compromise. The use of external fixators to correct deformity can dramatically change the dynamic of treatment course offering simultaneous correction of multiple deformities,antage of range of motion is possible such as the ankle, and less dynamic of treatment course offering simultaneous correction of multiple deformities. Asymmetrical paralysis of the foot presents a unique challenge with regard to treatment. Orthopedic surgeons must take into account the dynamic of the disease course in planning treatment due to the varying severity of disease expression and the range of outcomes possible.

Case Study

A case is presented of a 31 year old male from Western Africa diagnosed with polio as a child. Patient utilized a wheelchair for several years for ambulation and prior to treatment attempted to walk on the dorsum of his foot. A severe semi-rigid equinocavovarus deformity of the foot with “reversed foot position” is noted clinically. The foot demonstrates substantial plantarflexion motion of the ankle. Patient continues to be asymptomatic at the fourteen month follow-up. This case report describes a combination of acute soft tissue releases and lengthening with gradual deformity correction shortened required time in the external fixator while also protecting neurovascular status. Additionally, this case report describes a multi-level hexapod external fixation miter frame construct for simultaneous equinus and cavovarus deformity correction.

Reference:


Analysis & Discussion

Treatment strategies for post-polio deformities are challenging without a guideline consensus and there are few publications describing previous case reports with similar equinocavovarus deformities. Correction has been described with classic long-term external fixation or computer-assisted external fixation for deformity correction.3,4 Lamm et al. performed the equinus correction operation first and then performed the cavovarus correction operation second. Treatment strategies for post-polio deformities are challenging without a guideline consensus and there are few publications describing previous case reports with similar equinocavovarus deformities. Correction has been described with classic long-term external fixation or computer-assisted external fixation for deformity correction.3,4 Lamm et al. performed the equinus correction operation first and then performed the cavovarus correction operation second.4

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