

Case Study

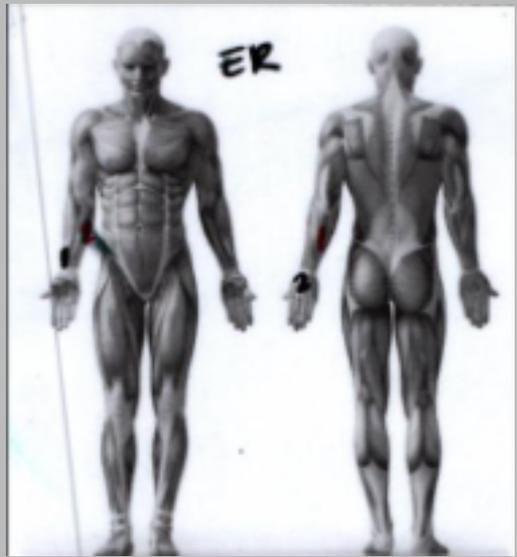
Improvements in LE strength, ROM and functional mobility for return to PLOF after traumatic tibial plateau fracture

PERFORMED AT:

Performance PT and Wellness

DIAGNOSIS:

41 year old male who presented to PT s/p external fixation for tibial plateau fracture and subsequent ORIF approximately 2 weeks later. Pt was on vacation in Alabama during the time of the injury and had surgery there for external fixation but was able to follow-up with an orthopedic surgeon upon return to Ohio for ORIF procedure. Pt presents to PT with locked hinged knee brace, nonWB with B axillary crutches.



TREATMENT AND OUTCOME:

To treat the patient's limited ROM of knee and slowly progress strengthening/overall mobility of R LE, we used the NEUBIE NMES device along with a combination of *gentle* manual therapy techniques (initially) for ROM of knee, joint mobilizations, edema reduction, quadriceps activation, manual stretching of gastroc/soleus complex and hamstrings. As the patient progressed, we were able to be more aggressive with regards to ROM, therapeutic exercise, weight bearing and progressing from hinged knee brace locked with gait while nonWB to brace unlocked with WBAT and no AD. Pt is continuing his therapy as he is currently not walking with any AD but still has a mild antalgic gait pattern and mild weakness in LE. However, he has progressed from 8 degrees short of full extension-30 degrees of flexion to full extension-123 degrees of flexion.

CLINICAL FINDINGS:

Process: Manual Muscle Testing, ROM

Findings: Weaknesses in quadriceps (2+/5 on R side), severe tightness of hamstrings, gastrocnemius, boggy joint mobility throughout knee with increased edema. Hip strength functionally 3+/5.-

Scan: hotspots found throughout RLE, especially near gastroc, hamstrings and along medial/lateral aspect of knee joint line (VMO, lateral IT band)

Assessment: Findings indicate Gastrocnemius, hamstring tightness contributing to poor knee ROM post-op.

Treatment: Upon first follow up visit, loosening on NEUBIE at 500pps with manual techniques including knee PROM, patellar mobilizations, gastroc stretching, ankle pumps and quad sets. We then ended with the edema protocol with the NEUBIE at 5 pps and an ice pack at the knee.

Patient report after the initial evaluation/initial treatment with NEUBIE: improvements in pain and swelling reduction, less stiffness noted with knee ROM.

DISCUSSION:

Patient response to treatment was very positive-his range of motion has normalized and he was able to avoid a manipulation of his knee by attaining at least 120 degrees of flexion. His strength continues to improve as pain lessens. With traditional physical therapy he likely would have regressed in ROM over time due to frequent bouts of increased joint stiffness and severe tightness of hamstrings, gastroc and poor hamstring/quadriceps co-contractions.

PATIENT PERSPECTIVE:

Mother was very pleased with results as he was able to keep up with school work, decrease time required on tests and homework and was able to play with Legos and other age appropriate toys without getting frustrated.