

## **Procedures in Neuromuscular Orthopedics that didn't go as well as I thought- Keith Baldwin, MD**

### **Basic Issues**

- We don't operate on the part of the body that is sick
- Muscles are spastic and difficult to balance across joints
- Motor planning issues are pervasive and in some conditions underdeveloped
- The extent of the neurologic injury and deformity dictate outcome in a majority of cases

### **Adductor lengthening for hip displacement in cerebral palsy**

- Study shows that 2/3 may not need bony surgery
- Makes sense clinically
- Adductor muscles and hip flexors responsible for flexion adduction deformity, coxa valga and persistence of fetal anteversion
- Windswept hips come out on the adducted side
- Results are not broadly replicated at other sites
- Early soft tissue release may be of some benefit to hygiene or scissoring but results on hip displacement are unclear and not reproducible
- Additionally, may not get as good of a release at time of bony surgery

### **Hamstring lengthening for crouch gait**

- Crouch = calcaneus plus flexed knees
- Cause is multifactorial and can include capsular pathology and weak quads
- If there are underlying causes left unaddressed, correction will be incomplete or recurrence will happen
- Treatment options include distal femoral osteotomy, guided growth, capsulotomy or ex fix
- Weakness must be addressed, and bracing and addressing distal lever arm disease is key

### **Lateral column lengthening for planovalgus in cerebral palsy**

- Cognitively Lateral column lengthening provides an enticing option in CP
- Results are variable depending on neurologic severity
- 20% recurrence rate can be expected and this rate increases as increasing neurologic disability is observed.
- Children with higher GMFCS involvement have lower daily step counts
- CC double or triple arthrodesis should be considered in this population to prevent recurrence and provide a rigid lever arm to push off with.

### **NM Spine fusion to lumbar 5**

- An encouraging idea
- Traditionally unit rods corrected by fixation to the pelvis
- More modern fixation is modular
- Many CP spines can be fixed to L5 with potential reduction in infection rate
- However failures are often spectacular
- Research as to which are the bad actors is ongoing.