OBJECTIVES

• Hip displacement is the 2nd most common musculoskeletal deformity in children with spastic cerebral palsy (SCP).
• In children with SCP, adductor myotomy (AM) can delay or prevent worsening hip subluxation.
• May obviate further surgical procedures
• Debate remains over the success of this preventive intervention

Purpose of this study:
1. Analyze functional and radiographic outcomes of AM performed for hip subluxation
2. Assess risk factors associated with subsequent surgical interventions

METHODS

• 134 consecutive patients who underwent AM by single surgeon btw 1977-2007
• Charts reviewed for demographics, GMFCS, hip range of motion (ROM), Reimer Index (RI) (Fig 1), and surgical details (Table 1)
• Included: Hip subluxation (RI ≥30°) or “Hip at risk” (RI <30°, hip abd <45°)
• Excluded: <5y postoperative follow, <12y old at final follow-up, concomitant bony procedure at index surgery
• Surgical treatment: Goal = intraoperative abduction to 60°
  - All patients underwent adductor longus myotomy, + brevis/gracilis as needed
  - 95% underwent concomitant soft tissue procedures
• Post-operative: Hip splint (Fig 2) or spica cast with hip abduction 40° x 3 weeks
  - After 3 weeks, abduction wedge used at nighttime
  - Individualized PT program for at least 6 weeks
• Subgroup analysis comparing GMFCS I-III vs IV-V
• Multivariate regression (95% confidence interval) performed to assess risks associated with subsequent AM or bony surgery
• Independent t-test for continuous and χ²-test for categorical variables (p≤0.05)

RESULTS

• At average follow-up of 8.6 years after index procedure:
  - 82 (61%) did not require further surgical intervention
  - 17 (13%) required repeat AM
  - 12 (9%) required bony procedure
  - 23 (17%) required repeat AM + bony procedure
  - 74% successfully treated without need for bony surgery

• Based on GMFCS level (Table 2):
  - 75% of GMFCS I-III patients
  - 56% of GMFCS IV-V patients

• Need for revision AM significantly different: (p<0.05)
  - 15% GMFCS I-III
  - 38% GMFCS IV-V

• No difference in need for subsequent bony surgery: (p=0.28)
  - 19% GMFCS I-III
  - 28% GMFCS IV-V

• Average RI at final follow-up was ≤30° in both groups
• GMFCS did not significantly impact risk of osteotomy (Table 3)

CONCLUSIONS

• AM continues to have important role in treatment of hip displacement in SCP
• 61% successfully treated with single AM
• Need for repeat surgery higher in patients with higher GMFCS
• Need for bony surgery did not vary based on GMFCS
• Patients requiring ≥ 1 AM at risk for bony surgery
• This data can be utilized to help counsel patients and their families on risk of further surgery based on functional level