Long Term Outcomes of Selective Dorsal Rhizotomy
A Case – Control Study

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OBJECTIVES
• Selective Dorsal Rhizotomy (SDR) follow up studies are often uncontrolled, limited in sample size, and do not follow subjects into adulthood.
• Pain, fatigue, and functional decline are common as adults with cerebral palsy (CP) age.
• This study examines how adults who did and did not have a rhizotomy in childhood compare in terms of self-reported pain, fatigue, and functional changes.

METHODS
• Self report internet survey
• 88 Adults with CP ages 18-35 were recruited from a tertiary care center and the community (Table 1).
• Case (rhizotomy) – Control (no rhizotomy)
• Survey tools for primary outcomes:
  • PROMIS Pain Intensity & Pain Interference Short Form
  • Fatigue Severity Scale
  • Original questions regarding functional change
  • Self Report Functional Measure (SRFM)
• Data analysis with SPSS software
  • Linear regression for pain and fatigue scores.
  • Multinomial linear regression for change in function.
  • All analyses controlled for GMFCS level.

RESULTS
• Case group included more involved GMFCS levels compared to control group.
• SDR status did not significantly predict incidence of pain, pain location, pain interference, or pain intensity.
• SDR status did not significantly predict fatigue.
• SDR status significantly predicted self-reported change in motor function; those who had SDR reported less decline in motor functioning (Table 2; \[X^2(2, 86) = 9.131, p = 0.01\]).
• SDR status contributed to 5.6% of variance in SRFM scores, with case group achieving higher functional scores when controlling for GMFCS (B = 6.908; p = 0.003).

CONCLUSIONS
• Selective dorsal rhizotomy appears to positively impact function, even years after surgery.
• Subjects perceived less functional decline.
• Subjects scored higher on self reported functional assessment relative to nonsurgical group when analysis controlled for GMFCS.
• No evidence of long term impact on pain or fatigue relative to nonsurgical group.
• Further studies are needed to continue to follow SDR patients as they age, examine reasons for functional decline in adults with CP, and further elucidate treatments that can help preserve function in an aging population.

DISCUSSION
• Strengths: Control group, long post-op follow up (all have reached adulthood, >20 year average follow up time), includes subject experience (pain, fatigue).
• Limitations: Significant differences in GMFCS distribution (accounted for in statistical analysis), functional assessment was by self report, potential for selecting subjects who have regular medical follow up and higher socioeconomic status.