
10-year follow-up after selective dorsal rhizotomy in cerebral palsy

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This commentary is on the original article by Tedroff et al. on pages 724–729 of this issue.

Tedroff et al.¹ have reviewed the 10-year outcomes in a population of children undergoing selective dorsal rhizotomy (SDR). In four patients there was not adequate follow-up, and therefore most of the study findings are based on 15 patients followed closely for 10 years after SDR. In these patients they have assessed a number of outcome measures, in particular the Modified Ashworth Scale (MAS), Gross Motor Function Measure 88 (GMFM-88), and the Wilson gait scale at baseline, 18 months, 3 and 10 years.

The results indicate that spasticity, as measured by the MAS, remains reduced at 10 years after SDR. However, the mean GMFM-88 score improved up to 3 years and then decreased, although not back to baseline. Almost all patients had orthopedic surgery, mainly soft-tissue releases and always after 1 year from SDR. Although the Wilson gait scale worsened on average between 3 and 10 years, mobility was better at 10 years than at baseline in 12 of the 19 patients.

The authors note that despite the persistent reduction in muscle tone, contractures developed and required soft-tissue surgeries. This indicates that development of contractures in cerebral palsy is not only mediated by spasticity and is an interesting finding.

The authors further conclude that the 'spasticity-reducing effect of SDR, although pronounced, did not seem to improve long term-functioning ...' and some may interpret this incor-

rectly to indicate that there was no value to the SDR. I think that failure to improve with respect to long-term functioning has not been shown definitively. Mobility changed from a mean of 7 to a mean of 6 on the Wilson gait scale, and on that scale a score of 6 or less indicates walking ability. Furthermore, the authors note that 12 of the 19 children showed improvement on the Wilson gait scale at 10 years. One could argue that the improvement in gait in these 12 children and the improvement of the mean Wilson gait score represents an improvement in mobility function. This may have resulted from the SDR or the combination of SDR plus orthopedic surgeries and one cannot exclude a positive effect of the SDR. It is true that the mean GMFM-88 declined from 3 years post-operatively to 10 years after SDR, but it did not return to baseline. It would have been helpful for the authors to have provided similar information on the number of patients, who exhibited a significant improvement in GMFM at 10 years. There certainly were such patients, since the 75th centile for GMFM-88 at baseline was 72 and at 10 years was 91. As for the Wilson gait scores, I expect that there were some patients who benefited after SDR plus/minus orthopedic procedures at 10 years compared to baseline.

There are a number of confounders that impact the mobility of the children as they get older, such as body mass index and even the social acceptability of being in a wheelchair. Many adolescents, even if they can walk with difficulty may choose to use a wheelchair, if it is socially acceptable, because they can get around more easily and quickly. They may find that that type of locomotion actually improves their quality of life. As the authors have stated, further studies are required to address some of these issues in the population with spastic cerebral palsy, regardless of how they have been treated.

REFERENCE

1. Tedroff K, Löwing K, Jacobson DNO, Åström E. Does loss of spasticity matter? A 10-year follow-up after selective dorsal rhizotomy in cerebral palsy. *Dev Med Child Neurol* 2011; 53: 724–29. DOI: 10.1111.1469-8749.2011.03969.x.

The influence of age on timing of single-event multilevel surgery: are adolescents with cerebral palsy comparable to a younger cohort?

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We are grateful to Švehlík et al.¹ for providing some useful information on the long-term results of single-event multilevel

surgery to improve gait in children with cerebral palsy, and for comparing two populations based on age. Although both groups improved substantially in their gait parameters postoperatively, the younger group saw some deterioration at their 10-year evaluation. However, the two groups are different in more than their age, as the authors point out.

The younger patients had more soft tissue procedures and the older patients had more bony procedures. This would mean that the younger patients had more muscle activation and muscle length issues (i.e. contracture) than the older