Letter to the Editor

Enhancing understanding and optimizing outcomes: insights from selective dorsal rhizotomy in pediatric cerebral palsy

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We would like to extend our gratitude to Dr. Walter Strobl and colleagues for their thoughtful and constructive critique of our recent clinical study titled "Short-term change of tibial torsion in children with spastic cerebral palsy after selective dorsal rhizotomy", which was published in the *Translational Pediatrics* (1).

Regarding the first point raised by Dr. Strobl *et al.* (2), we acknowledge that selective dorsal rhizotomy (SDR) involves cutting not only Ia and Ib fibers but also type II and III fibers, which could potentially lead to sensory disturbances. In our cohort, we observed that 60–70% of patients experienced transient hyperpathia postoperatively. However, these abnormal sensations resolved within one to four weeks after the SDR surgery in all cases. We attribute the absence of long-term sensory disturbances to two main factors:

The implementation of a novel intraoperative neurophysiological method to guide the selection of rootlets for cutting during SDR (3). This method results in a low rhizotomy ratio, meaning that fewer rootlets are cut, which may reduce the likelihood of irreversibly damaging type II and III fibers.

The relatively young age of our patients (average 6.0±2.2 years), which may allow for greater neural plasticity and the resolution of sensory complaints over time.

We reviewed our data and discovered that the 21% of cases that demonstrated significant improvements in transmalleolar angle (TMA) following SDR were considerably younger than those who improved less (4.8±1.0 *vs.* 6.6±2.1 years, P<0.0001). This suggests that SDR may be more effective in younger patients before the development of severe contractures, corroborating the advantages of early intervention (4).

Regarding the necessity for long-term follow-up, we agree that further studies with extended follow-up periods are essential to validate our findings. Nevertheless, we wish to emphasize that a minimum two-year post-SDR intensive rehabilitation program is crucial to sustain and enhance the initial benefits achieved through SDR (5,6). Considering the significant increase in body weight during puberty, we advocate for performing SDR before the age of 6–8 years,

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which could make the subsequent two-year rehabilitation therapy more effective.

We appreciate the opportunity to discuss these points, which have provided valuable insights into our study and will undoubtedly inform our future research. It is our sincere hope that this dialogue will contribute to the advancement of treatment options for children with spastic cerebral palsy.

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Footnote

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