Editorial

Selective dorsal rhizotomy

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In this issue of the Journal of Neurosurgery: Pediatrics, Langerak and colleagues report on the gait status of a group of patients with spastic diplegia cerebral palsy (CP) who underwent selective dorsal rhizotomy (SDR) in childhood 20 years ago in Cape Town, South Africa. The authors have previously reported on the gait status of the same cohort of patients at 1, 3, and 10 years after SDR.

This report is remarkable from 4 perspectives. First, the investigators were able to locate all 14 of the original patients and obtain approval for collecting data 20 years later. The approval and data collection undoubtedly were possible because of the investigators’ ability to bring the gait analysis system directly to the patients’ location instead of having the patients come to the laboratory. Hence, the simple 1-camera system with 3 surface markers provided an avenue of data collection that would not have been possible with a multicamera, complex marker set.

The second perspective is that significant improvements from the preoperative measure have persisted over the 20-year period. These improvements include knee and hip angular kinematics as well as cadence and step length measurements. An age-matched sample of healthy controls without disability was used to assess improvement. A shortcoming of the study is that data were not also collected from a control group with spastic diplegia CP. Ideally, such a group could have been followed-up in parallel to the SDR group, but a group selected in a similar manner to the group without disability would have also been helpful by providing another level of comparison.

The third perspective is that significant improvements from the preoperative measure have persisted over the 20-year period. These improvements include knee and hip angular kinematics as well as cadence and step length measurements. An age-matched sample of healthy controls without disability was used to assess improvement. A shortcoming of the study is that data were not also collected from a control group with spastic diplegia CP. Ideally, such a group could have been followed-up in parallel to the SDR group, but a group selected in a similar manner to the group without disability would have also been helpful by providing another level of comparison.

The fourth perspective is that gait limitations associated with CP do not disappear as the child becomes an adult, yet most gait research focuses solely on children with CP. Because adulthood lasts much longer than childhood, future research should focus on the gait characteristics of adults with CP as well as investigate interventions that could improve their gait and overall quality of life.

It should be noted that the authors did not go into great detail regarding other existing data. For example, prior to surgery on the original 14 patients, 4 were household ambulators and 10 were independent ambulators. At 20 years postoperatively, 1 patient was unable to walk independently, 1 walked with a crutch, and 1 used a cane. It would have been interesting to compare the current walking ability of these patients with their preoperative ability. It would also have been interesting to note any relationships that may have existed between pre- and postoperative gait status and subsequent orthopedic surgeries.

Langerak and colleagues are to be congratulated for their outstanding work. They have added to the body of knowledge in this area in an unprecedented and significant way. (DOI: 10.3171/PED/2008/1/3/177)

Reference