Medical Policy

Selectively Posterior Rhizotomy for the Spasticity of Cerebral Palsy

MP 7.01.21

Section
Surgery

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Description

Spastic cerebral palsy is the most common form of cerebral palsy and is manifested as hyperactive tendon reflexes, muscle hypertonia, and increased resistance to increasing velocity of muscle stretch. Spastic cerebral palsy is further defined according to the affected limbs; spastic hemiplegia involves the arm and leg on one side; spastic diplegia is characterized by lower extremity involvement primarily or exclusively; and spastic quadriplegia affects both arms and legs equally. Spastic diplegia is the most common type. When involving the lower extremities, the hypertonia induced by spasticity prevents normal standing, walking, or crawling.

Selective posterior (dorsal) rhizotomy is a surgical procedure that is intended to reduce spasticity by diminishing the number of afferent nerve transmissions to neuronal circuits that regulate the spinal stretch reflex. Either cervical or lumbar laminectomy is used to expose the appropriate spinal nerves. Either a predetermined percentage of the dorsal rootlets are severed or electromyographic responses to direct electrical stimulation may be used to identify specific nerve roots involved in spasticity-producing circuits. Selective posterior rhizotomy has been offered to patients in an attempt to increase ambulation, and in a smaller subset of patients without ambulatory potential, but whose severe spasticity limits adequate care and handling.

Policy

Selective dorsal rhizotomy may be considered medically necessary in the treatment of persons with cerebral palsy and associated severe spasticity interfering with gross motor function or adequate care.

Policy Guidelines

In general, dorsal rhizotomy should be limited to those patients who retain some ambulatory potential and to a smaller subset of patients without ambulatory potential, but whose severe spasticity limits adequate care.
Intensive outpatient physiotherapy for 3 to 6 months is typically offered as part of the postoperative treatment of patients. Benefits for physical therapy may be subject to contractual limitations.

Rationale

A randomized clinical trial comparing posterior rhizotomy plus physiotherapy compared to physiotherapy alone has reported improved results among those treated surgically, suggesting that the improvement in motor function after surgery is more than can be explained by physiotherapy alone. (1) These results are consistent with the results of the many case series that have been reported over the years. (2,3) Methods of targeting which dorsal rootlets to sever is still evolving, with fewer and fewer rootlets being cut as experience is gained. Further study is needed to determine if selection of nerve rootlets for rhizotomy on the basis of patient responses to intraoperative electrical stimulation is any better than performing predetermined partial posterior rhizotomies. (4)

References:


A search of literature was completed through the MEDLINE database for the period of January 1992 through June 1997. The search strategy focused on references containing the following Medical Subject Headings:

– Cerebral Palsy
– Rhizotomy

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