Selective dorsal rhizotomy

- A prospective gait follow-up study 30 years after selective dorsal rhizotomy
- Beyond Spasticity: The Dual Impact of Selective Dorsal Rhizotomy in Spastic Quadriplegic Patients With Generalized Dystonia and the Need for Intrathecal Baclofen
- Impact of Unilateral Selective Dorsal Rhizotomy (SDR) on Spasticity and Motor Function Improvement in Children With Hemiparetic Cerebral Palsy Caused by Intraventricular Hemorrhage
- Creating a Selective Dorsal Rhizotomy Team
- Selection of Children with Spasticity Other Than Cerebral Palsy: Indications, Long-Term Outcome, and Exclusion Criteria
- Preoperative Assessments for Selective Dorsal Rhizotomy
- Rhizotomy Surgery at the Conus Medullaris
- Cauda Equina-Level Selective Dorsal Rhizotomy

Selective dorsal rhizotomy (SDR) is currently the most widely used and effective CNS procedure. It is used to treat severe spasticity of the lower extremities that interfere with mobility or positioning.

Also known as selective posterior rhizotomy, this technique, which is performed under general anesthesia, involves the cutting of selective nerve roots between the levels of L2 and S1 or S2, the fibers lying just outside the vertebral column that transmit nerve impulses to and from the spinal cord. “Dorsal” or “posterior” indicates that the target nerve roots enter the posterior spinal cord. These fibers carry sensory information to the cord from muscle.

Sensory nerves are targeted because of the probable role they play in generating spasticity. Under normal physiologic conditions, excitatory signals from these sensory nerves are counterbalanced by inhibitory signals from the brain, maintaining normal muscle tone. In simplistic terms, when brain or spinal cord damage upsets this balance, excess sensory signaling can lead to spasticity. SDR is thought to improve spasticity by partially restoring the proper physiologic balance between these circuits.

The surgery is employed only when less-invasive procedures are unable to control spasticity adequately. The candidate nerve rootlets are stimulated electrically and those that lead to abnormal responses are cut; usually 25-50% of all tested rootlets are cut.

Indications

As practiced today, SDR is an effective treatment for young patients with bilateral spastic CP who are rigorously selected for surgery and for whom realistic objectives are set. SDR has therefore re-emerged as a valuable management option for spastic CP.

see Selective dorsal rhizotomy for spastic cerebral palsy.

Ingale et al., suggested that consideration should be given to selective dorsal rhizotomy (SDR) as an alternative in patients previously implanted with Intrathecal Drug Delivery systems complicated by infection or nearing end of battery life [1)].

Case series

see Selective dorsal rhizotomy case series.

Social media

A search was performed on Facebook, Twitter, and YouTube. Public information was quantitatively assessed by category, users, year of creation, and country of origin. Representative samples of comments and posts were then qualitatively assessed by thematic analysis.

Results: One hundred eighty-five Facebook groups and pages, 97 YouTube videos, and 14 Twitter accounts were identified, based in 13 countries. SDR and CP groups had a mean membership of 3063 and 2339, respectively; SDR and CP pages had a mean number of “likes” of 1650 and 10,711, respectively. Total YouTube video views were 593,135 (mean 6115). Total Twitter followers were 62,609 (mean 2160). Qualitative analysis identified seven categories of comments: emotional support and forming connections (22.34%), sharing information and advice (15.96%), appreciation and successes (31.91%), challenges and difficulties (8.51%), advertising/offering services (4.79%), inequities and access (4.79%), and social media as a second opinion (11.7%).

Conclusions: This study outlines the use of social media platforms in the distribution of information regarding SDR. We highlight the importance placed by patients and caregivers on the advice of their peers. The current report should inform healthcare providers' interactions with patients with respect to information seeking and provision of support [2].

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Ingale H, Ughratdar I, Muquit S, Moussa AA, Vloeberghs MH. Selective dorsal rhizotomy as an alternative to intrathecal baclofen pump replacement in GMFCS grades 4 and 5 children. Childs Nerv Syst. 2016 Feb;32(2):321-5. doi: 10.1007/s00381-015-2950-9. Epub 2015 Nov 9. PubMed PMID: 26552383.
2)
Canty MJ, Breitbart S, Siegel L, Fehlings D, Milo-Manson G, Alotaibi NM, Ibrahim GM. The role of social media in selective dorsal rhizotomy for children: information sharing and social support. Childs Nerv Syst. 2019 Nov;35(11):2179-2185. doi: 10.1007/s00381-019-04197-x. Epub 2019 May 11. PMID: 31079181.