

Supplementary Material

Selective dorsal rhizotomy from indication to rehabilitation: A worldwide survey

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Supplementary Information 1: Empty tables sent to participating centers

Diagnosis

Center	Diagnosis			GMFCS					Age	
	CP bilateral	CP unilateral	Other	I	II	III	IV	V	Children (typical age range)	Adolescent or Adult

XX = typical / X = will do, but less common / 0 = will not do/essentially never
Abbreviation: GMFCS: CP: Cerebral palsy, Gross Motor Function Classification System

Selection Process

Center	Who is involved in selection process?					Method				
	Neuro-surgeon	Orthopedic surgeon	Physiatrist	PT / OT	Other	History	Examination	Imaging	3D Gait analysis	Other

XX = typical / X = will do, but less common / 0 = will not do/essentially never
Abbreviations: CP: Cerebral palsy, OT: occupational therapist, PT = physiotherapist

Selection criteria

Center	Inclusion Criteria								
	Age (range)	Etiology of CP	Muscle tone	Strength	Motor control	Cognition	CNS imaging	Access post-op rehab	Other

XX = need to be eligible for SDR / X = preferably, not necessary / 0 = not a selection criteria
Abbreviations: CNS: central nervous system, CP: cerebral palsy, post-op rehab: post-operative rehabilitation.

Center	Exclusion Criteria				
	Not CP	Mixed tone	Contractures	No access to post-op rehab	Other (list, e.g. prior surgery)

XX = absolute exclusion criteria for SDR / X = not preferably, but not an absolute exclusion criteria / 0 = not a selection criteria
Abbreviations: CP: cerebral palsy post-op rehab: post-operative rehabilitation.

Surgical technique

Center	Technique	Laminectomies		Use of electro-physiological mapping		
	Multi- or single level	Level of laminotomies (range)	Laminectomy <i>or</i> laminoplasty	Mandatory, mostly or never	Monitored: Surgeon, other MD, Neurophysiologist or PT	CMAP, MEP's, SSEP's or H-wave

Abbreviations: CMAP: Compound muscle action potential, MD: medical doctor, MEP's: motor evoked potentials, PT: physiotherapist, SSEP: Somatosensory Evoked Potentials, tEMG: Triggered Electromyography.

Center	Rootlets				
	Decision pre-op or during surgery	Percentage rootlets (range)	Level of cutting rootlets: Conus or at exit foramen	Differentiating motor vs sensory: Anatomical, Electrophysiological or combination	Use of EMG guidance

Abbreviation: EMG: Electromyography.

Rehabilitation

Center	Rehabilitation				
	Time inpatient program (weeks)	Time outpatient program (weeks)	Frequency of therapy (hospital/community)	Use/Type of orthotics	Modalities used (e.g. lokomat, hydrotherapy)

Post-operative evaluation

Center	Follow-up		
	Frequency of check-up	Post-operative Assessment	If so, outcome measures used

Supplementary Information 2 : Participating centers

Selective Dorsal Rhizotomy experiences around the world

Register (\$50): <https://icmsaust.eventsair.com/ausacpdmiaacd-2022---childhood-disabilities/registration-form-virtual/Site/Register>

Pre-conference workshop
1st March 2022

Presenters

- Cape Town / Stellenbosch, South Africa**
Assoc Prof Nelleke Langerak, Dr Nico Enslin, Prof Robert Lamberts
- St Paul, United States of America**
Prof Tom Novacheck, Dr Marcie Ward
- New York, United States of America**
Prof Rick Abbott
- London, United Kingdom**
Dr Kristian Aquilina
- Amsterdam, the Netherlands**
Prof Annemieke Buizer
- Shanghai, China**
Dr Xiao Bo
- Tokyo, Japan**
Dr Nobuhito Morota
- Sydney, Australia**
Dr Simon Paget, Jenny Lewis
- Melbourne, Australia**
Dr Neil Wimalasundera, Pam Thomason
- Brisbane, Australia**
Meredith Wynter

Supplementary Information 3: Filled tables regarding the rehabilitation process

Center	Rehabilitation				
	Time inpatient program (weeks)	Time outpatient program	Frequency of therapy (hospital/community)	Use/Type of orthotics	Modalities used (e.g. lokomat, hydrotherapy)
A	1	Daily for 2 weeks, then 2-3x/week, intense blocks prn	Hospital 2x/day in week 1; home: daily in week 2-3; then 2-3x/week	Only if needed for function (AFO's)	NDT
B	6	Daily for 3 months, then 2-3x/week		Stiff PLS AFO	Lokomat for GMFCS III/IV, hydrotherapy, treadmill
C	4-6	Daily, then 2-3x/week for 5-6 months	Hospital 3 sessions; home daily 45-60 minutes for 5-6 months, 45-60 minutes 2x/week	AFO with check strap to allow variable dorsiflexion as tolerated	
D	1 (hospital ward)	2 weeks (stay in hospital in patient hotel)	Twice daily for 3 weeks; then 3x/week after discharge	AFO	Hydrotherapy, treadmill
E	0	5x/week for 3 months, then 2-3x/week up to a year post surgery	Community: physiotherapy 5x/week for 3 months, then 2-3x/week up to a year post surgery	Rigid ventral AFOs for the first year, thereafter, depending on gait parameters	Functional gait training and strength training
F	6	None (evaluation 1x/year)	Hospital: 1x/day for 6 weeks; community: 2-4x/month for 12 months; 1-2x/month thereafter; home: 1-3x/day	Whenever needed	None
G	1.5	12 months minimal	5 days/week, 6 hours/day	Stiff PLS AFO	Treadmill
H	4	2-6 weeks daily-, intensive blocks prn	Hospital: 2x/day for 6 weeks; community: 2-3x/week for 12 months, 2x/week for 12-24 months	SAFOs +/- wedge	Hydrotherapy, treadmill, Litegait, FES, cycling, lokomat

Abbreviations: AFO: Ankle-foot orthosis, FES: Functional electrical stimulation, GMFCS: Gross Motor Function Classification System, NDT: Neurodevelopmental treatment, PLS: Posterior-leaf-spring, Prn: Pro re nata (as needed), SAFO: Silicone ankle-foot orthosis.

Center	Follow-up		
	Frequency of check-up	Post-operative Assessment	If so, outcome measures used
A	At 6 months and 12 months, then yearly	Yes	Clinical only – function assessment
B	At 6 months, and 12 months, then yearly	Yes	3DGA, MAS, FMS, Gillette FAQ, GMFM-66
C	At 3 months, and 6 months, then yearly	Yes	Clinical exam, radiographs as indicated
D	At 6 months, 12 months, and 2 years	Yes	MAS, GMFM 66, CP QOL, TUG, 3DGA when appropriate
E	First year: at 3-6-9-12 months, then yearly	Yes	3DGA, FMS, GMFM-66, SPAT, functional strength, COPM, CPCHILD, Caregiver Questionnaire, X-rays hip and spine
F	At 1 month, then every 3 months for a year, then every 6 months for the next 4 years, then yearly	Yes	GMFM-88, MAS, Wee-FIM, Video
G	Every 3 months	Yes	MAS, GMFM-66, GMFCS, 3DGA
H	Research: Baseline; at 12 months, 2-5-10 years Clinical: + at 3 months, and 6 months, then annually	Yes	Imaging, 3DGA, MAS, MMST, (HAT), FCSs, FMS, Gillette FAQ, 6MWT, TUG, GMFM-66, COPM, CP-QoL, FACES pain, Promis pain interference

Abbreviations: 3DGA: 3D gait analysis, 6MWT: 6-minute walk test, COPM: Canadian Occupational Performance Measure, CPCHILD: Caregiver Priorities and Child Health Index of Life with Disability, CP-QOL: Cerebral Palsy Quality of Life, FCSs: Family Community Support service, FMS: Functional Mobility Scale, Gillette FAQ: Gillette Functional Assessment Questionnaire, GMFCS: Gross Motor Function Classification System, GMFM: Gross Motor Function Measure, HAT: Health Assessment Tool, MAS: Modified Ashworth Scale, MMST: Manual Muscle Strength Test, SPAT: Spasticity Test, TUG: Timed Up and Go Test, Wee-FIM: Functional Independence Measure for children.