Rehabilitation Medicine
Tone Management

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TONE MANAGEMENT
SPA STICITY

- Motor disorder that is defined as velocity dependent increase in tonic stretch reflexes (Cuccurullo, 2015)
- Graded typically using the Modified Ashworth Scale
COMPLICATIONS OF SPASTICITY

- Interfere with function and hygiene
- Lead to contractures, fractures, heterotrophic ossification, joint subluxation, pain, skin breakdown

https://m.facebook.com/orthobullets/photos/a-lateral-radiograph-of-an-elbow-showing-extensive-heterotopic-ossification-with/10161516408720492/
BENEFITS OF SPASTICITY

- Help with transfers, standing, gait
- Maintenance of muscle bulk
- Prevention of deep vein thrombosis and osteoporosis

https://dailycaring.com/how-to-use-a-walker-safely-and-comfortably/
EVALUATION OF SPASTICITY

Where

When

What

How
EVALUATION OF SPASTICITY

- Physical
  - Passive and active range of motion
  - Modified Ashworth Scale
  - Manual muscle testing
  - Fine motor movements
EVALUATION OF SPASTICITY

- Physical
  - Reflexes
  - Gait
  - Activities of daily living
MANAGEMENT OF SPASTICITY

Reduce abnormal tone

Improve Function
NON PHARMACOLOGIC TREATMENT

- Avoid noxious stimuli
- Stretch
- Serial casting
- Splint

https://www.orthoproactive.com/serial-casting
NON PHARMACOLOGIC TREATMENT

- Derotational straps

https://surestep.net/products/de-rotation-straps/
NON PHARMACOLOGIC TREATMENT

- Modalities
  - Cold and heat
  - Electrical stimulation
  - Vibration

MANAGEMENT OF SPASTICITY

- Generalized Pharmacological Intervention
- Localized Pharmacological Intervention
- Generalized Surgical Intervention
- Localized Surgical Intervention
GENERALIZED PHARMACOLOGICAL INTERVENTION

- Baclofen
- Dantrolene
- Tizanidine
- Benzodiazepines
- Gabapentin
LOCALIZED PHARMACOLOGICAL INTERVENTION

- Chemodenervation with botulinum toxin
- Chemoneurolysis with phenol or ethyl alcohol
Intrathecal baclofen pump

- Trial through lumbar puncture catheter with pre and post evaluation
- Routine follow up for pump refill required
• Tendon lengthening and transfers
  • Multiple techniques with differing precautions post operatively
  • Followed by therapies and splinting

SYMPTOMS AND MANAGEMENT
FUNCTION

- Mobility – Home, stairs, community
- Endurance
- Falls
- ADLs – Toileting, showers, dressing, cooking
FUNCTION

- Shoes, shoe insert
- Daytime vs night time bracing through orthotist
- Assistive device
  - Cane
  - Walking sticks
  - Walker

https://www.rei.com/product/167696/mountainsmith-halite-7075-trekking-poles-pair?sku=1676960001&store=62&cm_mmc=PLA_Bing%7C2170000000170551_1676960001%7C92700061984795680%7CIBA%7C71700000081208627&gclid=9a2780cc5851c89208de21b46238087&gclsrc=3p.ds&msclkid=9a2780cc5851c89208de21b46238087
FUNCTION

- Chair through Seating Clinic
  - Transport chair
  - Wheelchair
    - Manual
    - Manual with power assist
  - Power chair

https://www.numotion.com/products-services/adults/manual/power-assist-add-on
FUNCTION

- Commode
- Bath/shower
- Grab bar
FUNCTION

- Driving – Getting foot on and off of pedals, recent near/accidents
- Driving evaluation with a specialized occupational therapist

https://www.vehicleadaption.co.nz/car-modifications.html
PAIN

- Visceral (Organs)
  - Bowel
  - Bladder
PAIN

- Somatic (Skin, joints, muscle, bone)
  - Wounds
  - Musculoskeletal
PAIN

- Neuropathic
  - Spinal cord
  - Peripheral nerves
PAIN

- Multimodal treatment
  - Modalities
  - Therapies
  - Medication
  - Referral to Interventional pain or Orthopedics
• Sleep initiation
• Overnight awakening
  • Nocturia
  • Spasms/Pain
• Poor sleep quality
  • Restless leg
  • Apnea
• Daytime naps
SLEEP

- Sleep hygiene
- Labs
- Medications
- Sleep study
BOWEL

- Constipation
- Lose stools due to hard stool ball

- Due to
  - Impaired innervation
  - Decreased mobility
  - Decreased water intake
- Stool softeners
- Stimulant
- Osmotic
- Suppository
- Enema
- Clean out

https://www.verywellhealth.com/bristol-stool-chart-4174964
Frequency, urgency, incontinence, retention

Due to
- Impaired innervation
- Worsened by
  - Constipation
  - Urinary tract infection

BLADDER

- Urodynamic study
- Urology
  - Medication
  - Intermittent cathing

• Nocturia
• Due to
  • Impaired innervation
  • Return of fluids from lower extremities
  • Increased fluid intake in the evenings
  • Urinary tract infection
MOOD

- Social work
- Psychology
- Psychiatry
- Other supports
COGNITIVE FUNCTION

- Attention
- Intelligence
- Memory
- Comprehension
- Problem Solving
- Judgment
- Language
COGNITIVE FUNCTION

• Neuropsychology for testing
• Education
QUESTIONS OR COMMENTS
THANK YOU!