
APE: ADAPTED PHYSICAL EDUCATION

Lecture 3

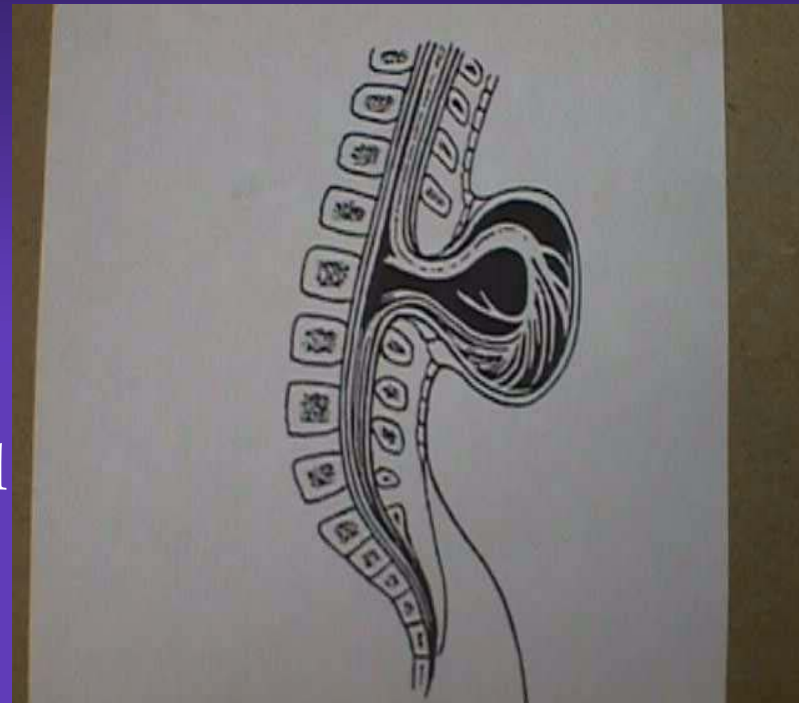
Spina Bifida & CPME,
MEI-YAO HUANG Ph.D.

Lecture Outline

- Questions on Traumatic SC Injuries?
- Questions on Reading?
- Spina Bifida Lecture
- CP Lecture
- Work Session on Projects

Spina Bifida

- Myelomeningocele
 - incidence 80% of the cases
 - usually in the lumbar region
 - usually lack bowel and bladder control
- Meningocele
- Occulta



Spina Bifida (cont.)

- Hydrocephalus
- Shunt
 - tube & pressure valve
 - used to relieve pressure and drain excess fluid
- Treated soon after birth



Development

- Range of motion
- Weight bearing
 - stimulate bone growth
 - circulation
- Developmental Positions
 - crawling, sitting, standing, etc.
- Overprotected and isolated

Secondary Disabilities

- Bone deformities
 - orthotics and braces
- Postural deviations
- Pressure sores
- Bruising
- Urinary infections
- Obesity

Differences

- Age of onset

- Developmental implications

- bone growth
 - contractures
 - sensory deprivation
 - obesity

- Social/Emotional Adjustment

- Better acceptance of condition
 - Still have social adjustment concerns

ISSUES

- Maximize ability to be ambulatory
- Ambulation immobilizes the hands and arms -- implications for PE
- Prolonged use of crutches
 - upper limb joint problems
- Negatives of regressing to a chair
- Impact of obesity on mobility
- Social impact - bowel & bladder control

Developmental Continuums

LEARNING CONTINUUM

Rote Relationships Concepts Abstracts Generalization
Low Proficiency High

PHYSICAL/MOTOR CONTINUUM

Reactions Voluntary Control Functional Motor Skills
Low Proficiency High

SOCIAL CONTINUUM

U Solitary Parallel Interactive Introspective
V Low Proficiency High

A P E

Cerebral Palsy (CP)

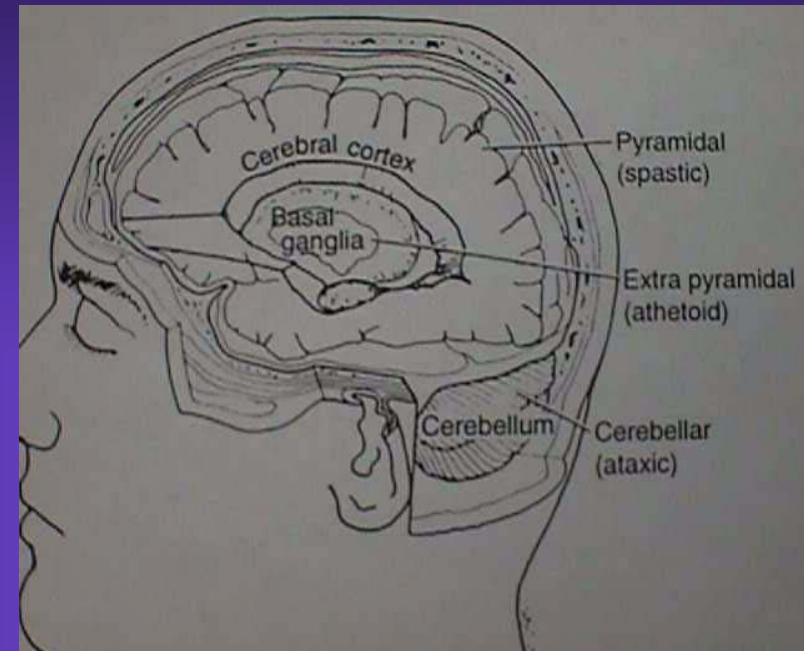
- Permanent disability
- Damage to motor control parts of brain
- Occurs before, during or shortly after birth

CP - Classification

- Topographical
 - Monoplegia - 1 limb
 - Diplegia - major involvement both lower limbs + minor involvement of upper limbs
 - Hemiplegia - both limbs one side of body
 - Paraplegia - both lower limbs
 - Triplegia - any three limbs
 - Quadriplegia - total body: all limbs, head and neck

Cerebral Palsy- Classification

- Neuromotor
 - Spasticity - cerebrum
 - Athetosis - basal ganglia
 - Ataxia - Cerebellum
 - Tremor - basal ganglia
 - Rigidity
 - Mixed



Brain Parts and Function

- Brain Stem
 - Reflexes - muscle tone and posture
- Midbrain: basal ganglia, thalamus
 - Posture, sensory input from eyes, coordination of mov.
- Cerebellum
 - Balance, timing fast movements
- Cerebrum
 - Initiate voluntary movement

CP - Classifications

- Spasticity

- increased muscle tone
- hyperactive stretch reflex

- Athetosis

- fluctuating muscle tone
- uncoordinated, involuntary movements
- head, neck, limbs and trunk
- many have speech problems

CP - Classifications

- Mixed
 - Spasticity and Athetosis

- Ataxia
 - balance
 - muscle coordination
 - hypotonicity

CP - Classifications

- Tremor
 - Involuntary rhythmic shaking movements
 - continuous or only when trying to move
- Rigidity
 - diffuse damage to the brain
 - severe mental retardation
 - severe spasticity

Cerebral Palsy - Classification

- Functional - Examples - 8 levels
 - I - Severe spasticity & athetosis in all extremities
 - Motorized Wheelchair
 - II- Severe to moderate spasticity/athetosis
 - Regular Wheelchair - level surfaces
 - VII- Moderate to minimal spastic hemiplegic
 - Walk and run without assistive devices

Secondary Disabilities

- Mental Retardation
- Deprivation
- Contractures
- Vision problems
- Respiratory problems
- Seizure disorders

Developmental Continuums

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A P E

Planning for CP

- Long Term Goals
- Time
- Integration with Related Services
- Transition Services
- Athletic options

Assessment

- Tests available
- Assessment needs
- Functional abilities
- Task Analysis
- Product vs Process

Prescribing & Teaching

- Motivation
 - a reason to learn motor skills
 - a believe they can learn skills
- Success
 - they need to perceive they are improving
- Peer tutoring models
- Maximize # of successful practice trials

Evaluation

- Student - emphasize progress
- Program
 - identify methods that do and do not work
 - adjust program based on progress
- Communicate Regularly
 - Student
 - Parents

CP Issues

- Cognitive goals vs Motor goals?
- Inclusion for social involvement vs emphasis on acquiring motor skills
- Use of computer simulations?
- Development of well educated spectators?
- Long-term out look and quality of life?