



NEUROLOGICAL ASSESSMENT OF SCI

Moushami Purkayastha
Asst.prof in Dept of Physiotherapy
IHS,BBSR

Neurological Assessment of Spinal Cord Injury

- Sensory examination
- Motor examination
- ASIA impairment scale
- Functional evaluation

Sensory evaluation

- Pin-prick/dull with a safety pin
- light touch with cotton-tip applicator
- Sensory level- the most caudal dermatome to have intact sensation
- Sensory index scoring-total score 112 (56 on both side)

Pin-prick examination

- Three-point scale(0-2)
- Face-normal control point
- 0-Inability to distinguish between the pin and dull edge of the pin
- 1(impaired)-can distinguish between sharp and dull but not as sharp as on face
- 2-pin is felt as sharp.....

Cotton- tip applicator

- 2(intact)-Same sensation as on the face
- 1-less than the face
- 0-absent
- Distance-not exceed 1cm
- C₆-C₈—dorsal surface of proximal phalanx
- Chest and abdomen- Mid-clavicular line

Key muscles

 Elbow flexors

 Wrist extensors

 Elbow extensors

 Long finger flexors

 Small finger
abductors

 Hip flexors

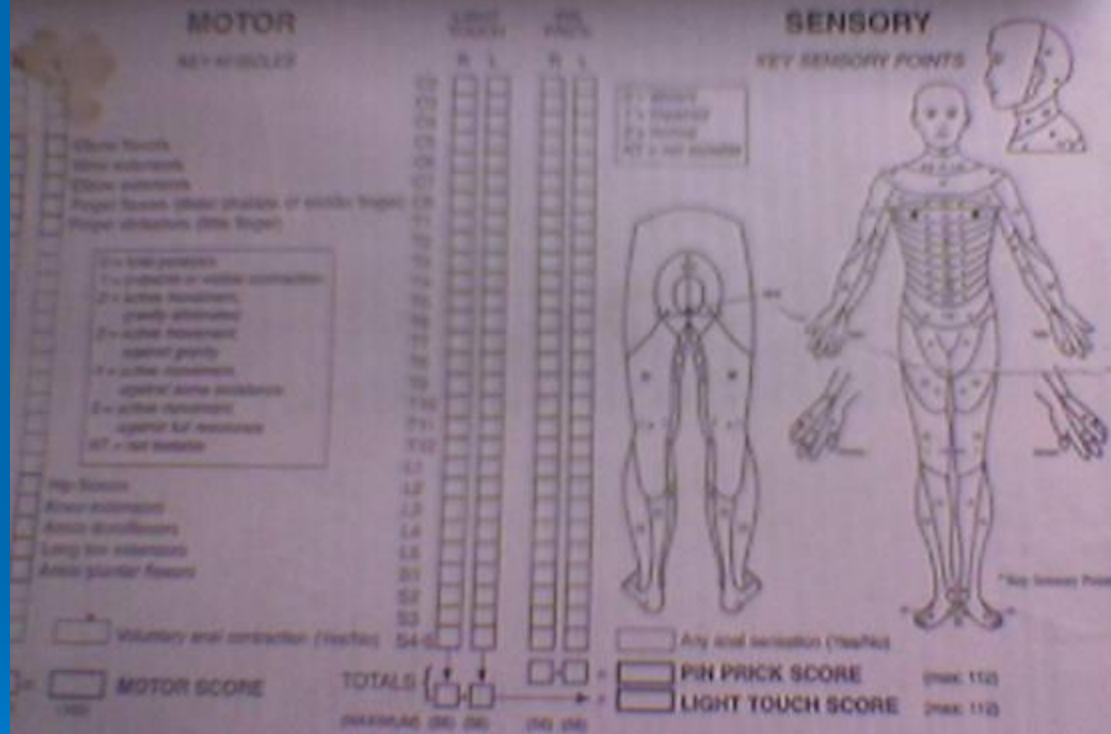
 Knee extensors

 Ankle dorsiflexors

 Long toe extensor

 Ankle plantarflexors

STANDARD NEUROLOGICAL CLASSIFICATION OF SPINAL CORD INJURY



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SEM

Complete injury-the absence of sensory and motor function in the lowest sacral segment

ZPP-(for complete injury),the most caudal segment with some and/ or motor function below the neurological level.

Motor level- lowest key muscle at least gr 3,above that. level gd 5.

Neurological level-the most caudal level at which both motor and sensory modalities are intact on both sides of the body

ASIA impairment scale

- A -complete: No motor or sensory function is preserved in the sacral segment s4- s5.
- B- Incomplete: Sensory but not motor function preserved below the neurological level and the sacral segments s4-s5.
- C-Motor function is preserved below the neurological level , and more than half of the key muscle below the neurological level have a muscle grade less than 3.
- D- At least half of the key muscles below the neurological level have a muscle grade of 3 or more.
- E- Motor and sensory function are normal.

For c, d....

- sensory or motor function in sacral segments s4-s5.
- Either (a) voluntary anal sphincter contraction or (b) sparing of motor function more than three levels below the motor level+ sensory sacral level.

Clinical syndromes of spinal cord injury

- Central cord syndrome.
- Cruciate paralysis
- Brown- squared syndrome
- Anterior cord syndrome
- Posterior cord syndrome
- Conus medullaris and cauda equina injuries

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- Conus medullaris-terminal segment of the adult spinal cord at L₁.lesion s2-s4- detrusor paralysis, penile erection but seminal emission intact- sympathetic supply.
- Epiconus-L4-s4. Lesion-leg muscle and foot affected ,sparing of reflex function of sacral segments.
- Cauda equina- Nerve root

Functional evaluation

- FIM
- Barthel index
- Quadriplegia index of function
- Benzel classification
- Walking index for spinal cord injury