

LESI GANGLIA BASALIS



CORPUS STRIATUM KONTRALATERAL

HIPERKINESIA - HIPOTONIA

Korea (Hemikorea kontralateral), yaitu Gerakan involunter mirip gerakan Tangan menari.

Atetosis yaitu keadaan motorik dimana Jari tangan, lidah, kaki atau otot wajah Tidak bisa diam sejenak

HIPO / BRADIKINESIA

Hipokinesia, yaitu tidak mampu bergerak namun tonus otot masih ada

Bradikinesia, yaitu kelambatan bergerak namun tonus otot masih ada



PARKINSON DISEASE

LESI GANGLIA BASALIS

NUKLEUS SUBTALAMIKUS KONTRALATERAL &
KORPUS STRIATUM KONTRALATERAL

SINDROMA BALISTIK

BALISMUS, yaitu mirip
Korea tapi gerakan lebih
kasar

DISTONIA, yaitu sikap
Menetap dari salah satu
Atetotik yang hebat,
dapat berupa hiperextensi
Atau hiperflexi tangan,
Hiperinversi kaki

**HIPERTONIA/
RIGIDITAS**, yaitu tonus
Otot yg meningkat yg
Melawan gerakan flexi
– extensi secara pasif

LESI GANGLIA BASALIS

**SUBSTANSIA NIGRA PARS KOMPAKTA &
KORPUS STRIATUM KONTRALATERAL**

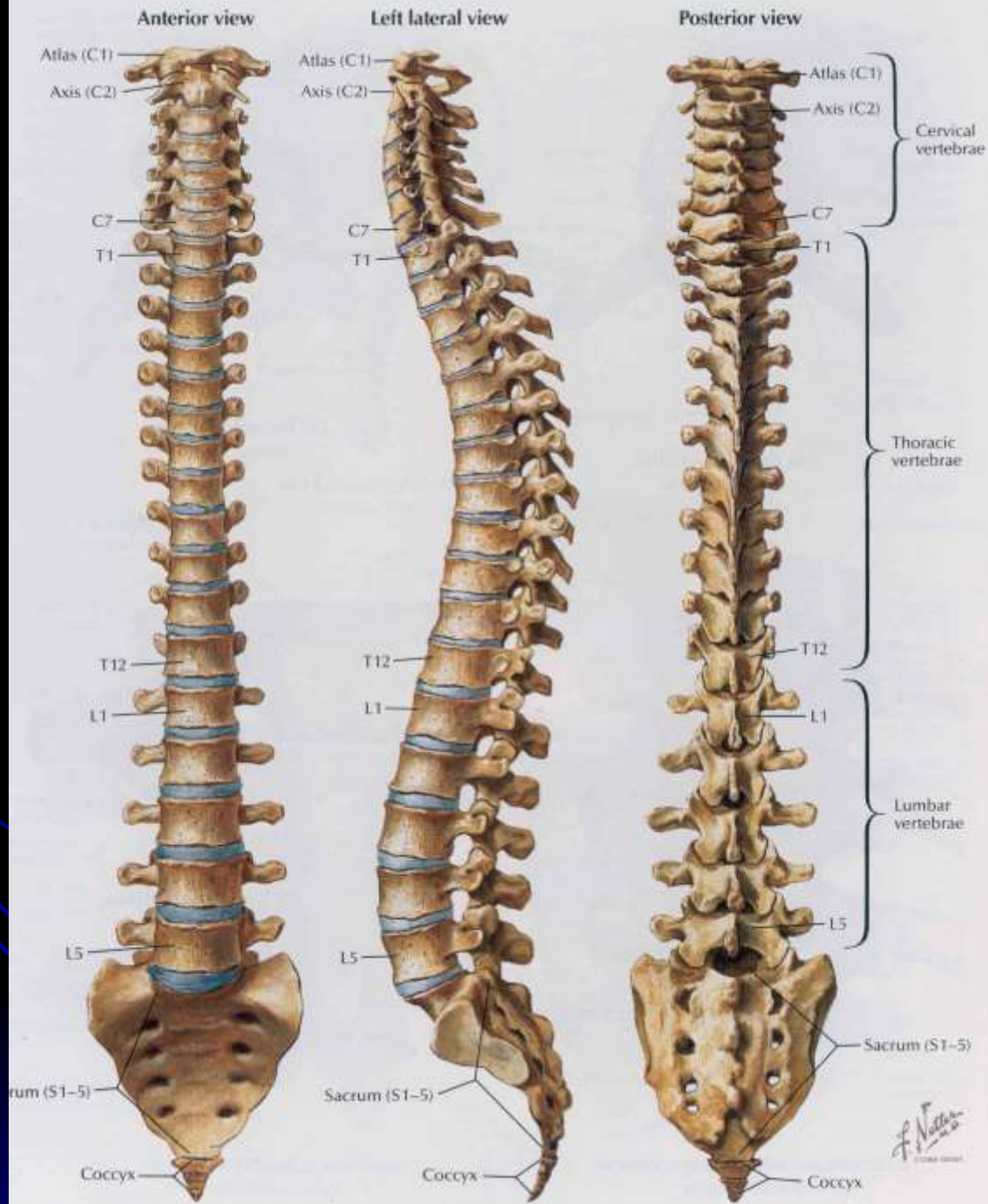
SINDROMA HYPOKINESIA – HIPERTONIA (PARKINSON)

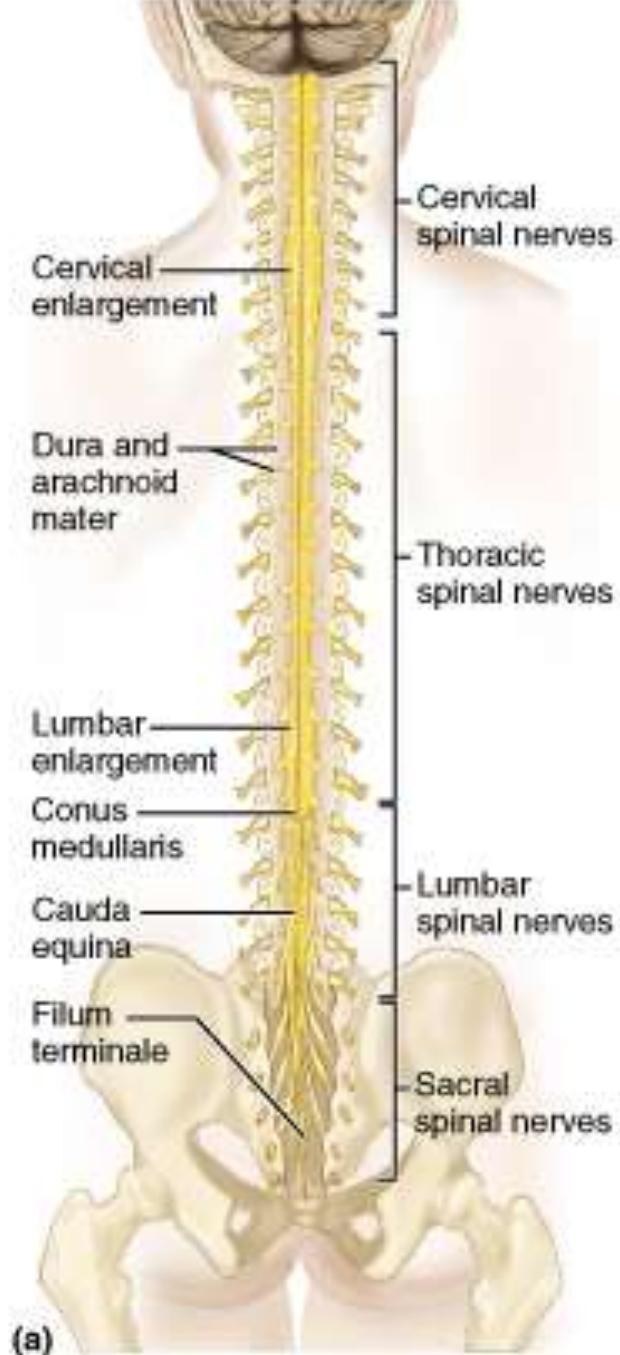
AKINESIA, yaitu
Mobilitas gerak lambat
Meliputi pro/retro/
lateropulsi

RIGOR /RIGIDITY,
yaitu otot tidak
Dapat relaksasi dan terjadi
Cogwheel rigidity tanpa
Parese

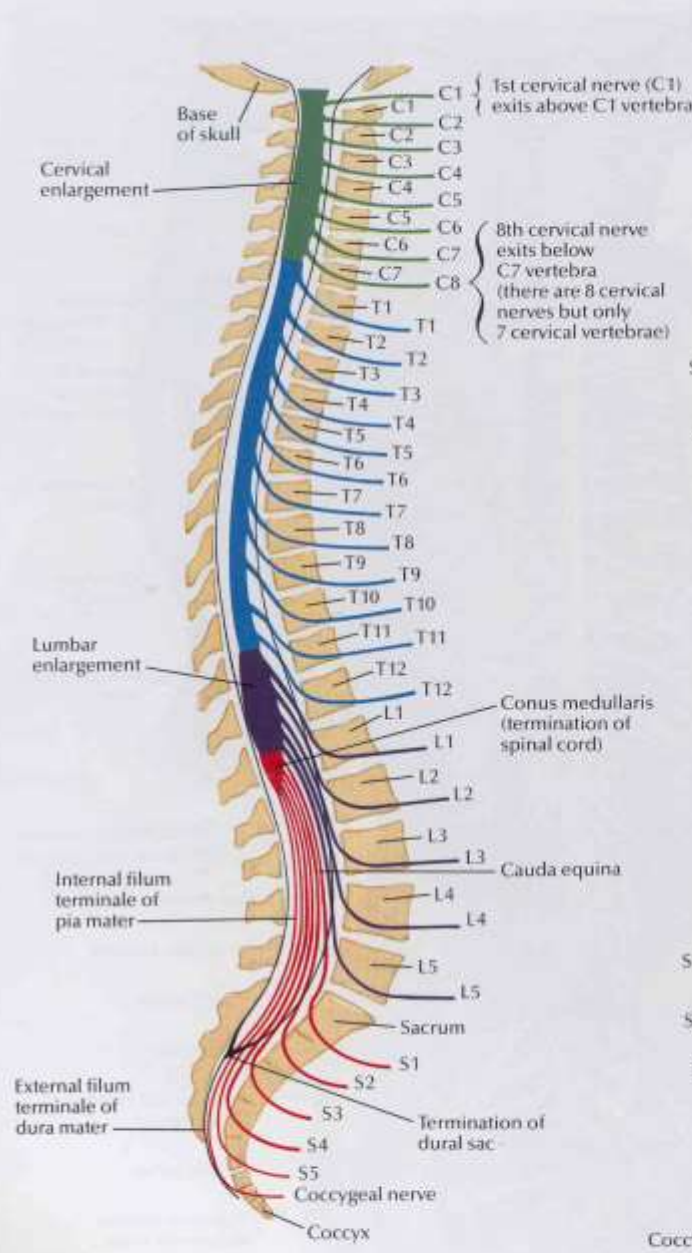
RESTING TREMOR
Gerakan ritmik tangan
pada saat istirahat

MEDULA SPINALIS

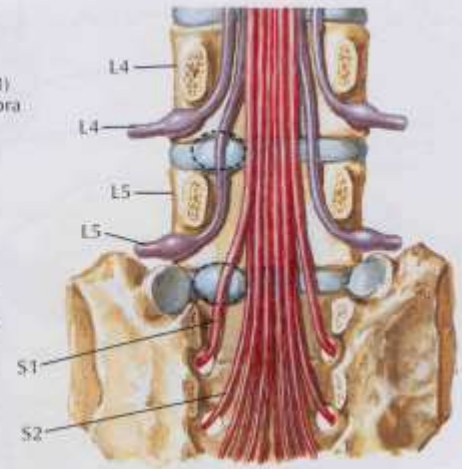




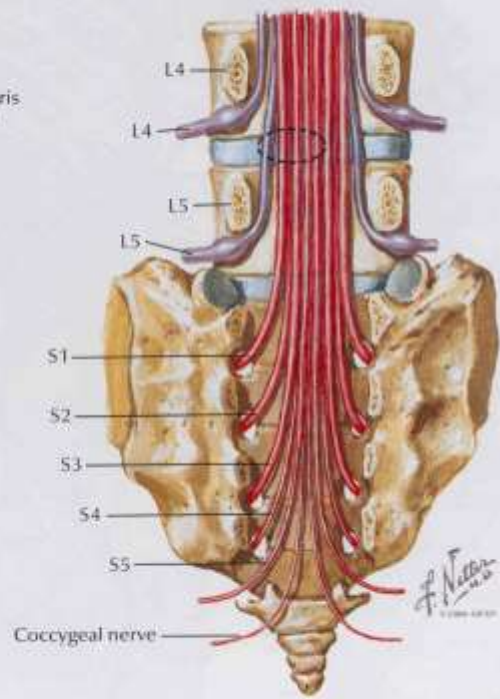
(a)



- Cervical nerves
- Thoracic nerves
- Lumbar nerves
- Sacral and coccygeal nerves



Lumbar disc protrusion does not usually affect nerve exiting above disc. Lateral protrusion at disc level L4-5 affects 5th lumbar nerve, not 4th lumbar nerve. Protrusion at disc level L5-S1 affects 1st sacral nerve, not 5th lumbar nerve



Medial protrusion at disc level L4-5 rarely affects 4th lumbar nerve but may affect 5th lumbar nerve and sometimes 1st-4th sacral nerves

Myelum dari Foramen magnum  vertebra L1-2

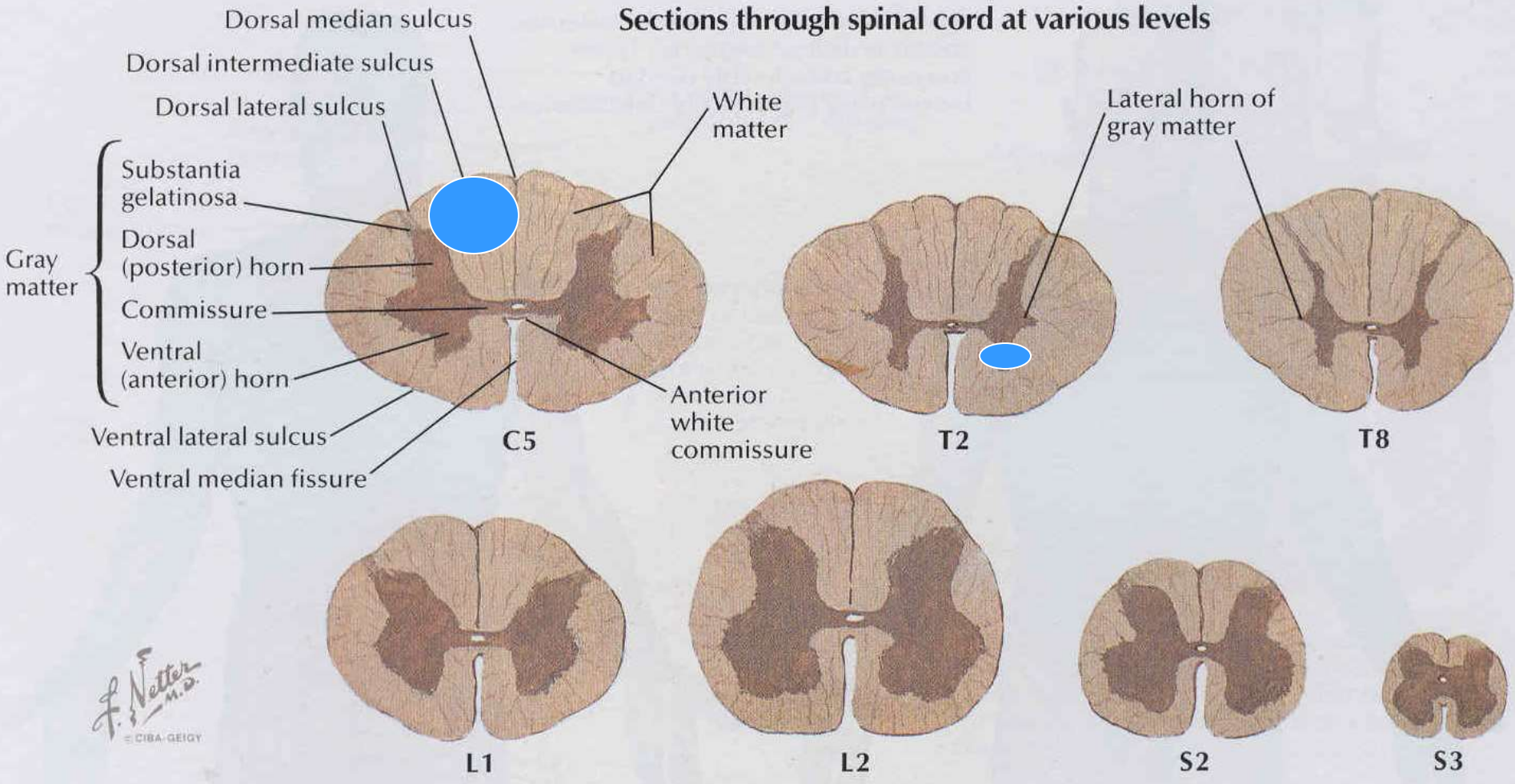


ASCENDENS MEDULARE

TEMPAT KELUARNYA SEGMENT NERVUS SPINALIS
BERBEDA DENGAN VERTEBRA

VERTEBRA	SEGMENT MYELUM
Cervical	+1
Thoracal	+2
Lumbal-Sacral	+3

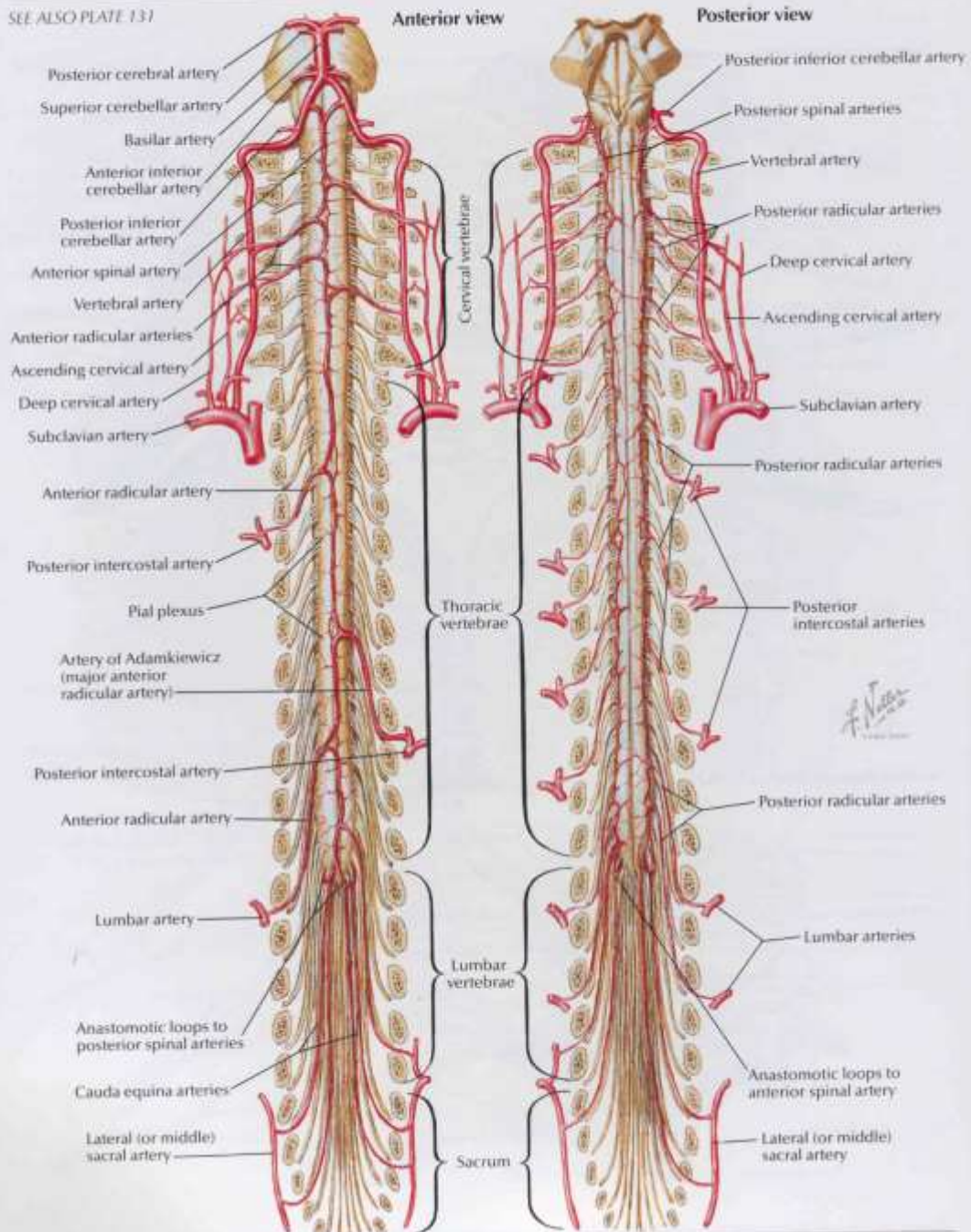
Sections through spinal cord at various levels

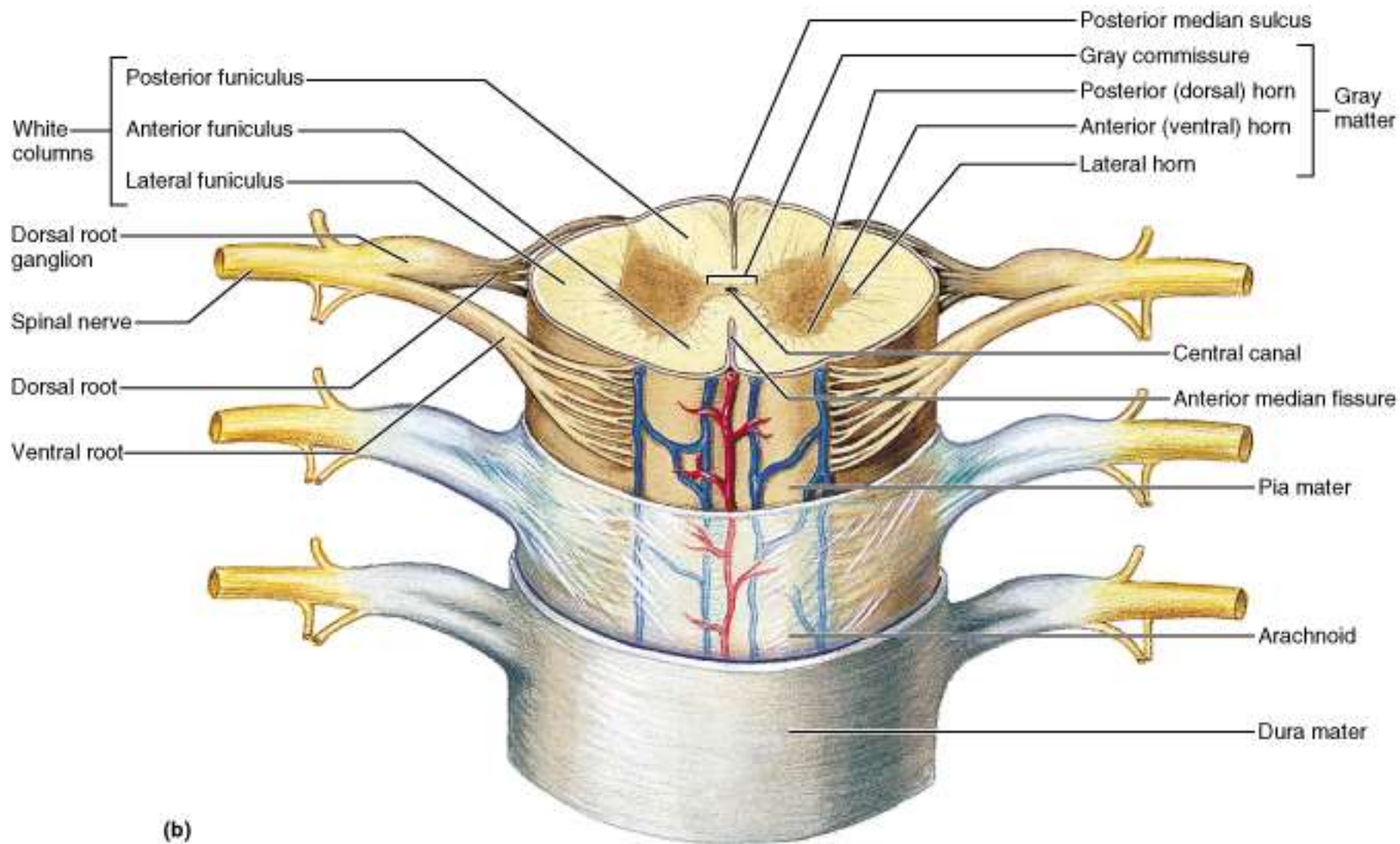


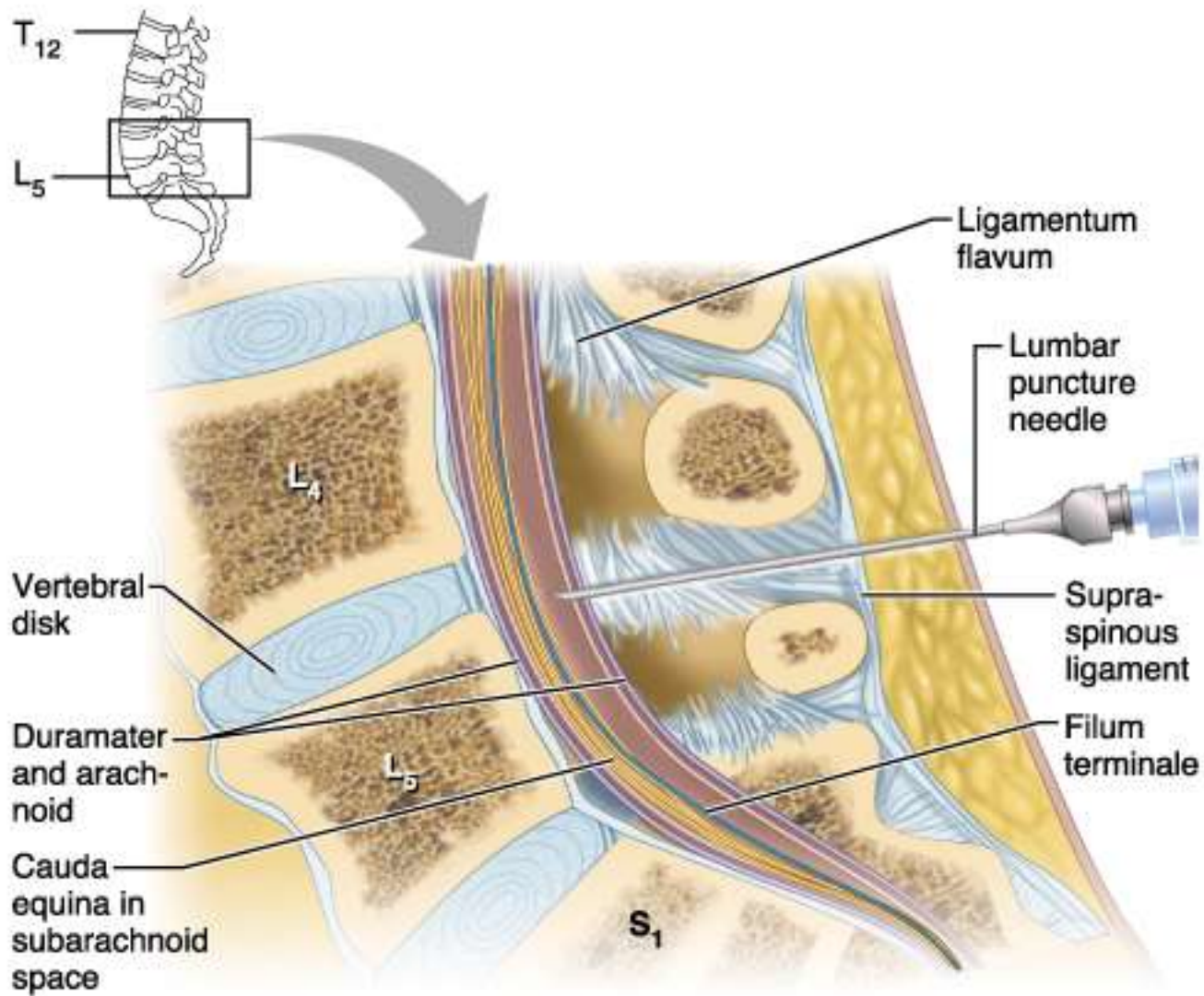
F. Netter M.D.
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Arteries of Spinal Cord: Schema

SEE ALSO PLATE 131

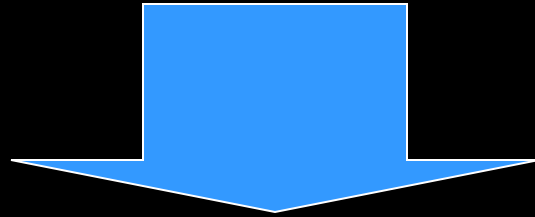






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Secara klinis ada 4 traktus yang penting

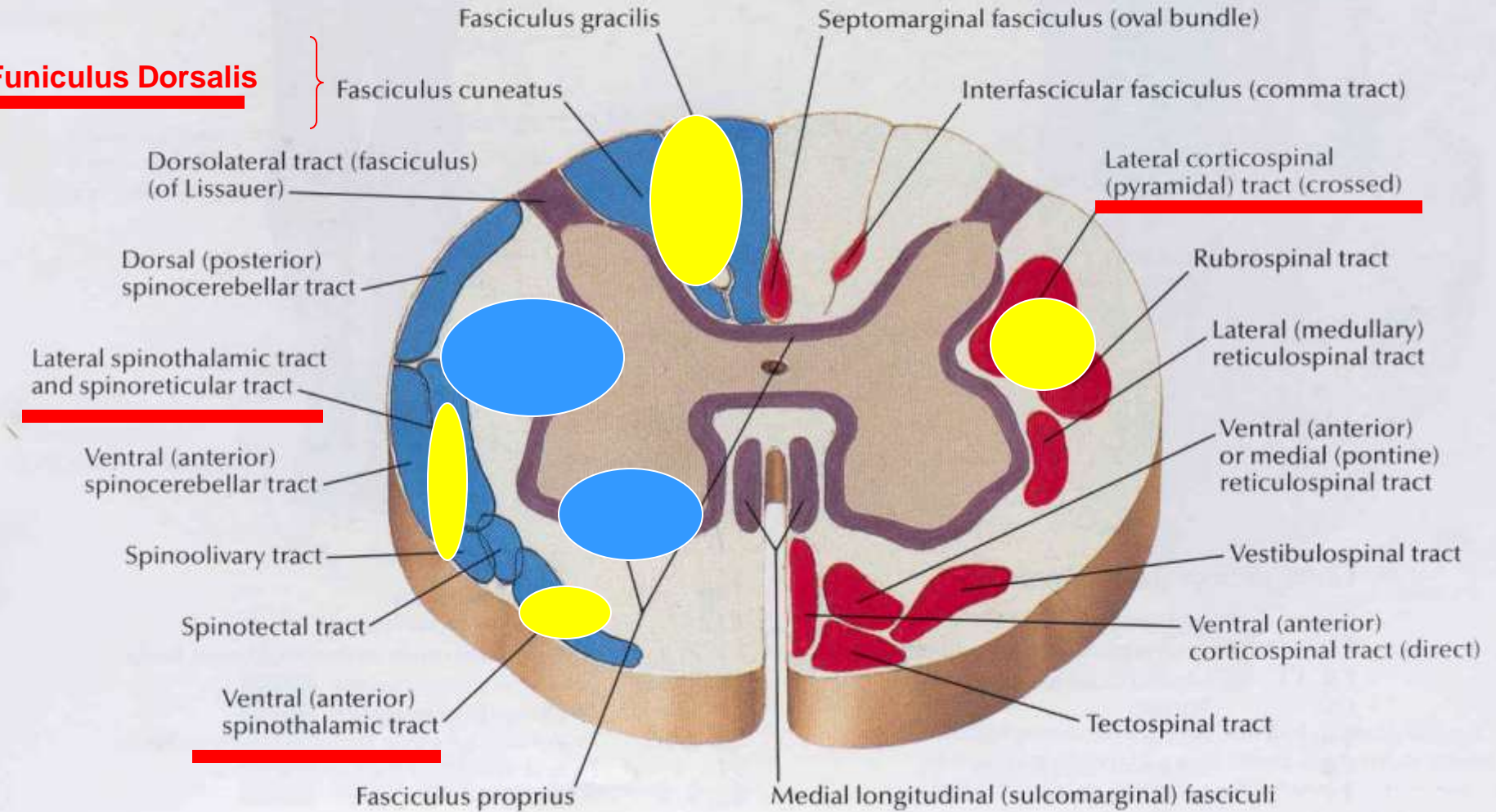


- 1. Traktus spinotalamikus anterior** (Rangsangan raba)
- 2. Traktus spinotalamikus lateralis** (rangsangan nyeri dan suhu)
- 3. Kolumna dorsalis medula spinalis** (Rangsangan proprioseptif disalurkan melalui)
- 4. Tractus Kortikospinalis lateralis** (Motorik)

Principal fiber tracts of spinal cord

- Ascending pathways
- Descending pathways
- Fibers passing in both directions

Funiculus Dorsalis



Menentukan tinggi lesi medula spinalis

berdasarkan : **gangguan motorik**
gangguan sensibilitas
gangguan susunan saraf otonom

Gangguan motorik biasanya timbul kelumpuhan yg sifatnya **paraparese / tetraparese**

- Paraparese UMN : lesi terdapat supranuklear thd segmen **medula spinalis lumbosakral (L2-S2)**.
- Paraparese LMN : lesi setinggi segmen medula spinalis **L2-S2 atau lesi infra nuklear**.
- Tetraparese UMN : lesi terdapat supranuklear terhadap segmen medula spinalis servikal
- Tetraparese : ekst.superior LMN
ekst. Inferior UMN

Gangguan sensibilitas :

- **Gangguan rasa eksteroseptif**
- **Gangguan rasa propioseptif**

Biasanya yg dipakai u/ tinggi lesi →

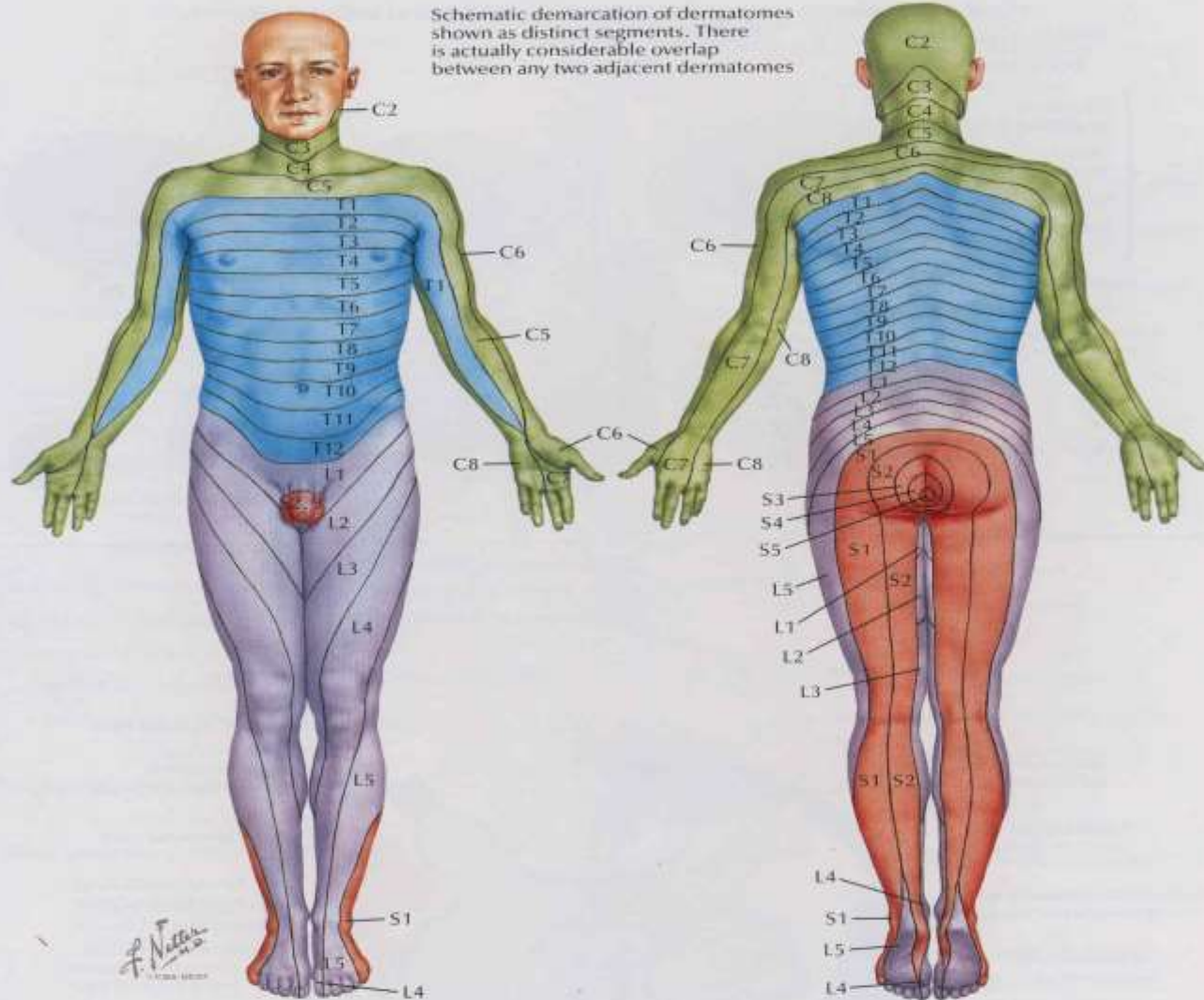
pemeriksaan eksteroseptif
(Dermatoma)

Gangguan sensibilitas segmental :

- Lipatan paha : **lesi Medula spinalis L1**
- Pusat : **lesi medula spinalis thorakal 10**
- Papila mammae : **lesi medula spinalis th. 4**
- Saddle Anestesia : **lesi pada konus**

SEE ALSO PLATES 455, 511; FOR MAPS OF CUTANEOUS NERVES SEE PLATES 18, 445, 447, 448, 449, 451, 454, 506-510

Schematic demarcation of dermatomes shown as distinct segments. There is actually considerable overlap between any two adjacent dermatomes



Levels of principal dermatomes

- C5 Clavicles
- C5, 6, 7 Lateral parts of upper limbs
- C8, T1 Medial sides of upper limbs
- C6 Thumb
- C6, 7, 8 Hand
- C8 Ring and little fingers
- T4 Level of nipples

- T10 Level of umbilicus
- T12 Inguinal or groin regions
- L1, 2, 3, 4 Anterior and inner surfaces of lower limbs
- L4, 5, S1 Foot
- L4 Medial side of great toe
- S1, 2, L5 Posterior and outer surfaces of lower limbs
- S1 Lateral margin of foot and little toe
- S2, 3, 4 Perineum

Gangguan sensibilitas radikuler :

Extremitas atas / bawah

- **Ggn sensibilitas sesuai dgn radiks post.**

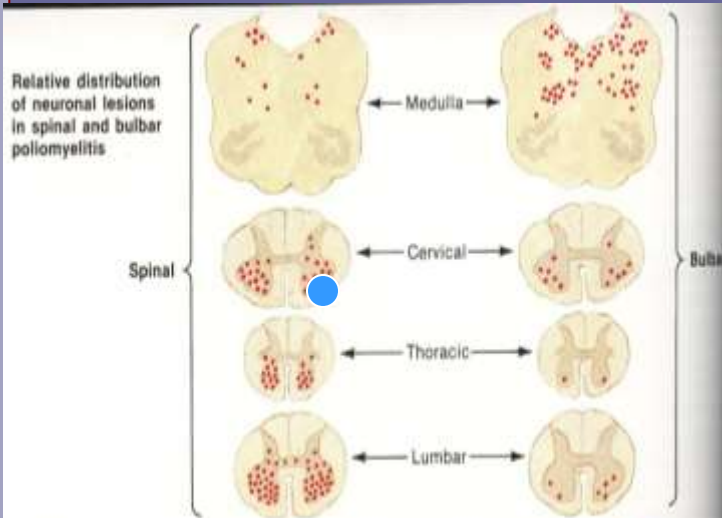
Ggn sensibilitas perifer :

- **Glove/stocking anestesia**

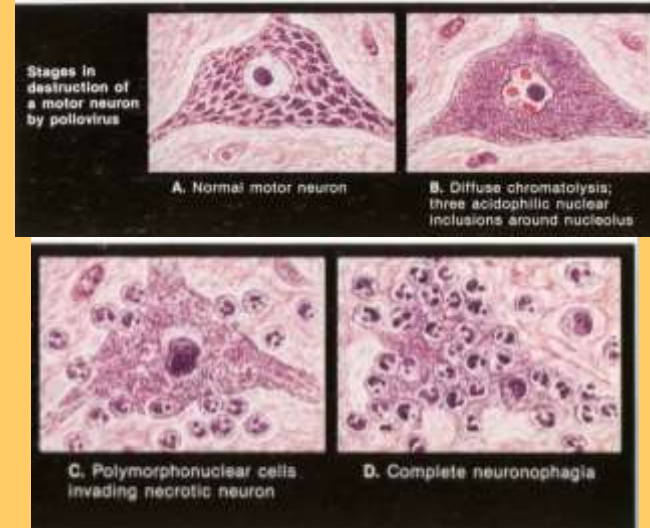
Gangguan Susunan Saraf Otonom :

- Produksi keringattest perspirasi
- Bladder : berupa inkontinensia urinae atau uninhibited bladder.
 - Autonomic bladder / spastic bladder
lesi medula spinalis supranuklear terhadap segmen sakral.
 - Flaccid bladder/overflow incontinence
lesi pada sakral medula spinalis.

LESI CORNU ANTERIOR MEDULA SPINALIS

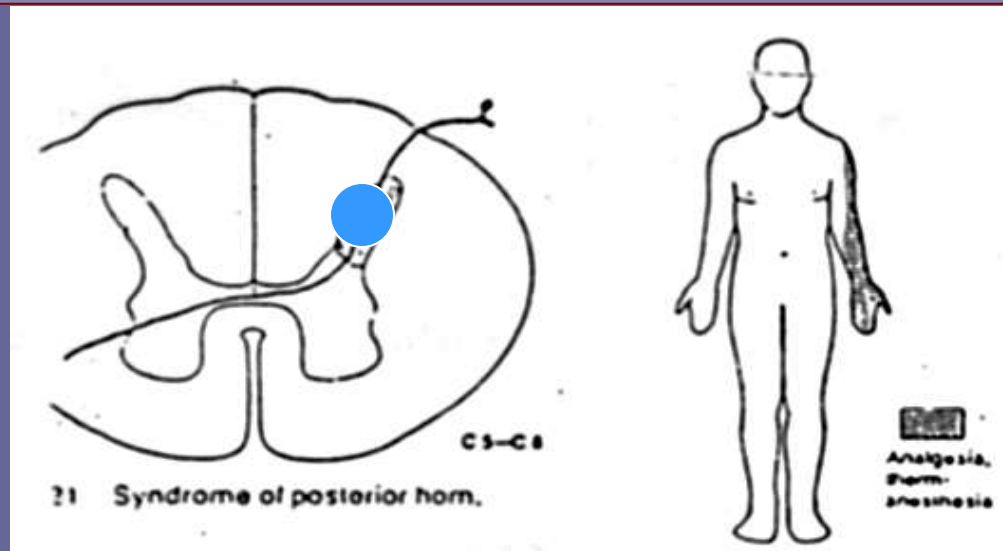


Paralytic residua of spinal poliomyelitis



- ☐ Mono / para/ tetraparesis (LMN)
- ☐ Paralyse flaccid
- ☐ Atrofi otot, fasikulasi
- ☐ Gambaran klinis yang lain sesuai gejala penyakit (Cth Poliomyelitis)

LESI CORNU POSTERIOR MEDULA SPINALIS



Defisit sensorik terutama proprioseptif, gerakan pasif sendi di bawah tingkat lesi dengan dermatome pada sisi yang sama

LESI MOTOR NEURON & JARAS KORTIKOSPINAL/ KORTIKOBULBAR

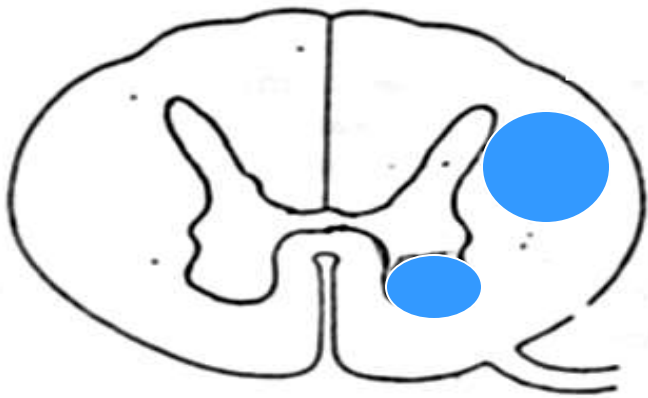


Fig. 2.25 Syndrome of combined lesions in anterior horns and lateral pyramidal tract (amyotrophic lateral sclerosis).



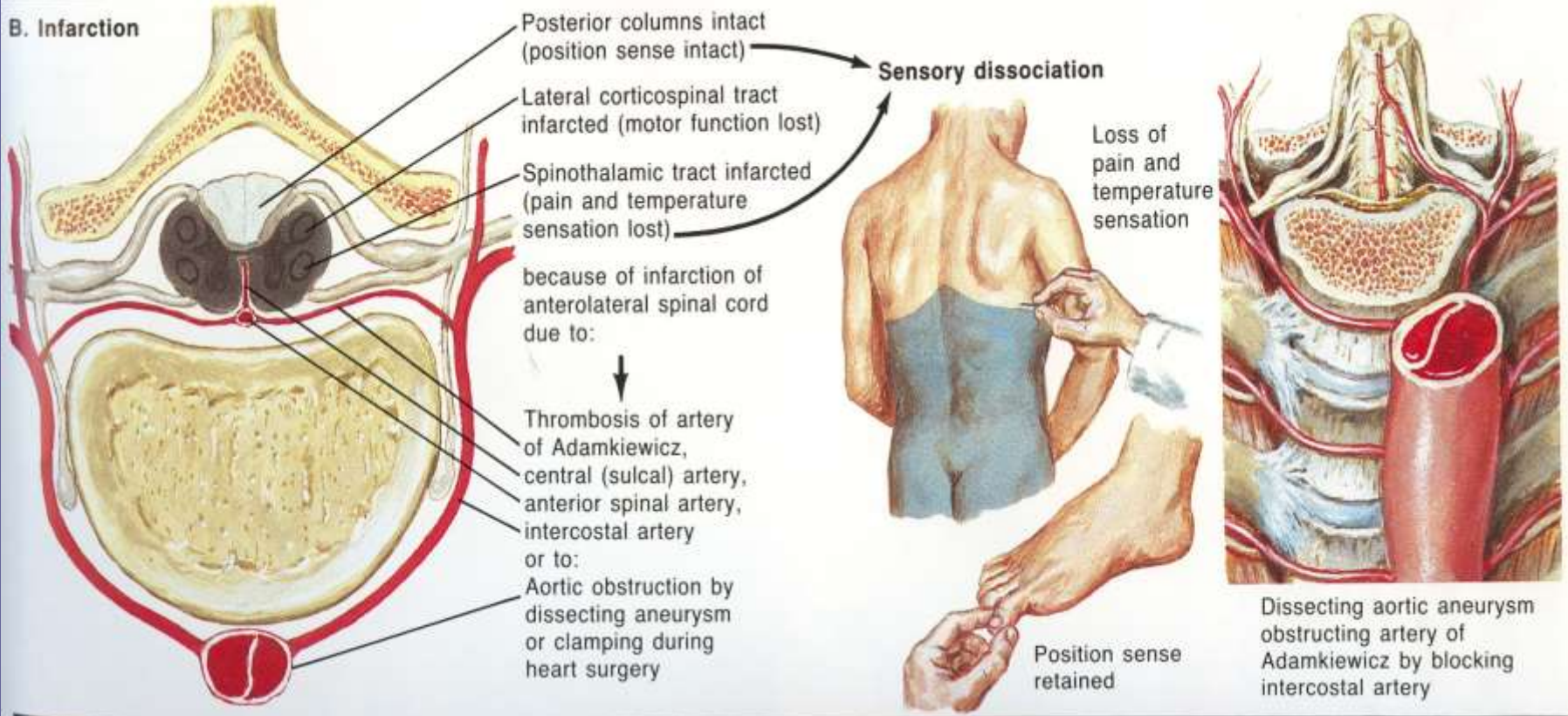
AMYOTROPHIC LATERAL – SCLEROSIS Atau MOTOR NEURON DISEASE

Mono/paraparese (flaccid) ditambah pola
Kelumpuhan UMN (tergantung letak lesi)

- ✦ Gejala UMN & LMN berbaur.
 - ✦ Tahap awal (UMN+LMN), tahap akhir (LMN)
- ✦ Gejala LMN : Mono/para/tetraparese, atrofi otot, Fasikulasi
- ✦ Gejala UMN : Kelumpuhan bilateral (bila inti saraf Otak motorik → degenerasi, cth lidah)
- ✦ Hiperefleksia (Force crying / force laughing)
- Kelumpuhan UMN dan LMN secara berbauran
- Tetraparese, tangan parese LMN, tungkai parese UMN
- **Sensoris dan otonom normal**

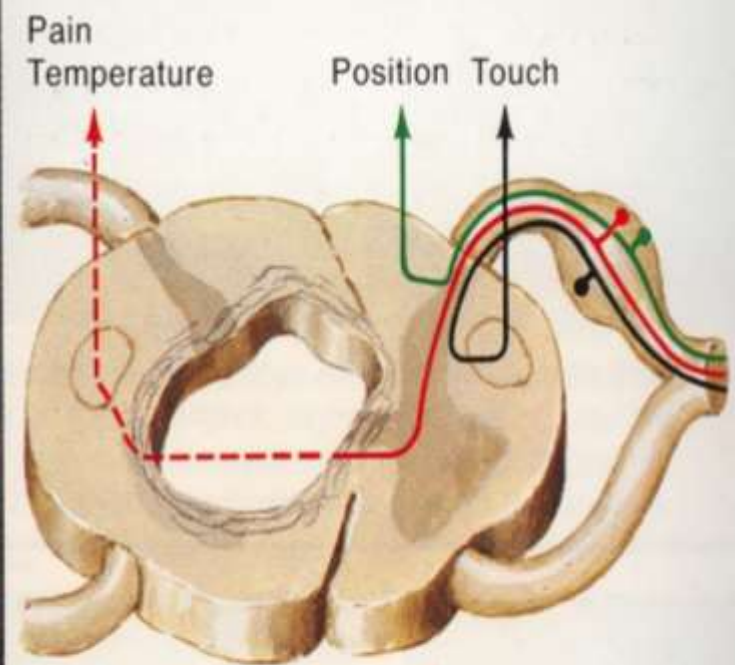
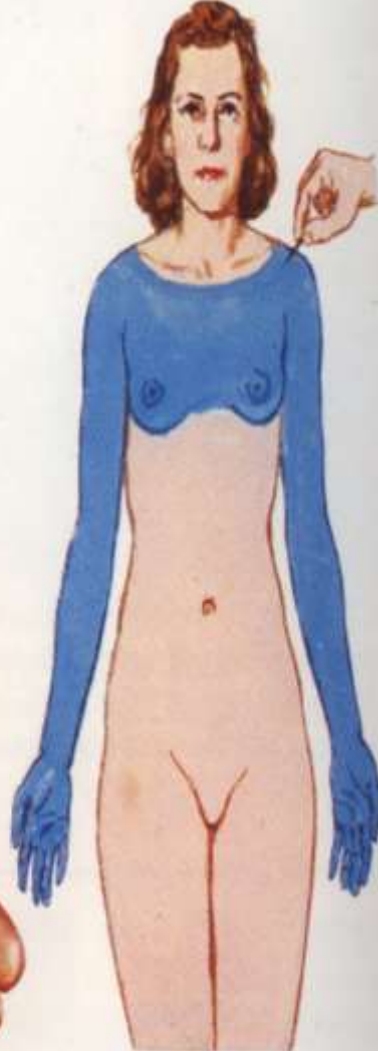
SINDROMA ARTERI SPINALIS ANTERIOR

B. Infarction



- ☐ Kelompokan UMN bilateral
- ☐ Disosiasi sensibilitas (hanya terjadi defisit sensorik protopatik bilateral Tingkat lesi ke bawah)
- ☐ Proprioseptif terganggu

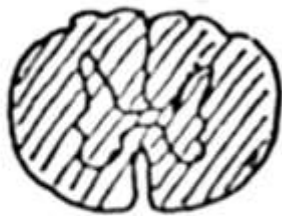
Lesi pada canalis centralis / SINDROMA SIRINGOMYELIA



- ☐ Kelompokan bilateral (LMN) tergantung Letak lesi
- ☐ Disosiasi sensibilitas
- ☐ Reaksi neurovegetatif (-)

LESI MYELUM TRANSVERSAL CERVICAL ATAS

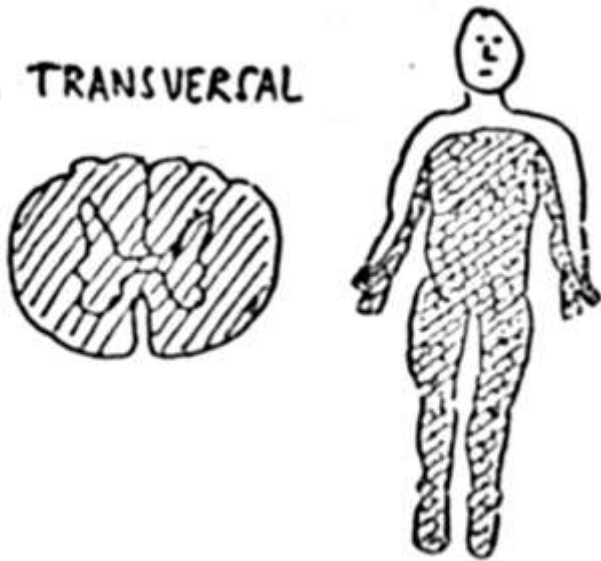
LESI TRANSVERSAL



- ▣ Tetraplegi UMN di bawah lesi, pd tingkat lesi bersifat LMN
- ▣ Hipestesi setingkat lesi
- ▣ Reaksi neurovegetatif (-)
- ▣ Lesi di atas C3 fatal (menghentikan Pernafasan – paralisa n.phrenicus Dan interkostalis)

LESI MYELUM TRANSVERSAL CERVICAL BAWAH

LESI TRANSVERSAL



- Kelumpuhan UMN di bawah tingkat lesi (kedua tungkai)
- Kelumpuhan LMN di tingkat lesi (kedua tungkai)
- Dari tingkat lesi ke bawah, penderita quadriplegia atau tetraplegia
- Anestesi protopatik
- Anestesi proprioseptif
- Retensi urin
- Retensi alvi
- Gangguan pada fungsi motorik, somatosensorik, fungsi neurovegetatif dan autonom

LESI MYELUM TRANSVERSAL THORACAL ATAU LUMBAL ATAS

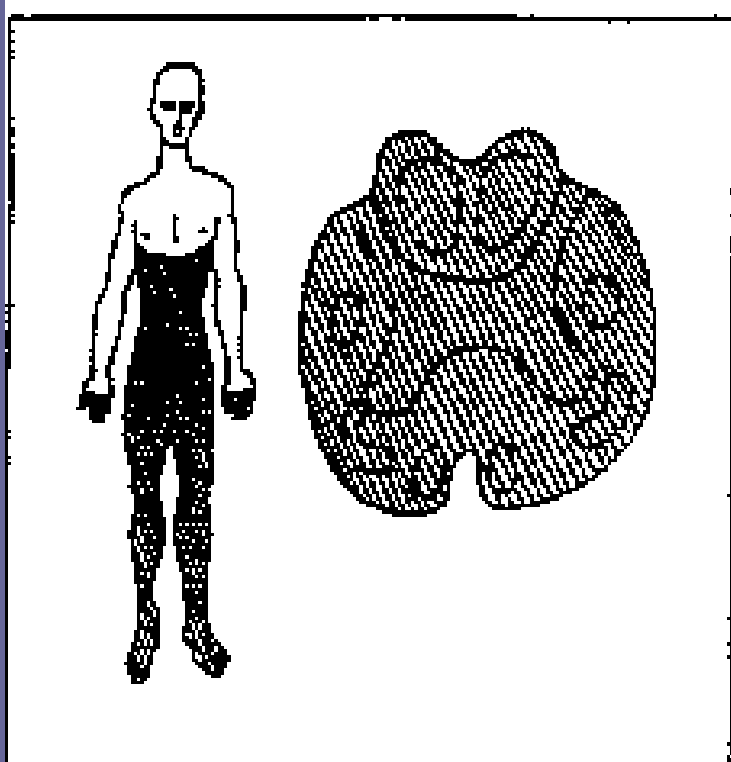


Figure 2-30: Complete spinal cord transection

- ▣ Paraplegi UMN di bawah lesi, pada Tingkat lesi bersifat LMN
- ▣ Hipestesi setingkat lesi
- ▣ Tidak bisa defekasi dan miksi
- ▣ Gangguan otonom

LESI MYELUM TRANSVERSAL LUMBAL PALING BAWAH BAWAH DAN SAKRAL

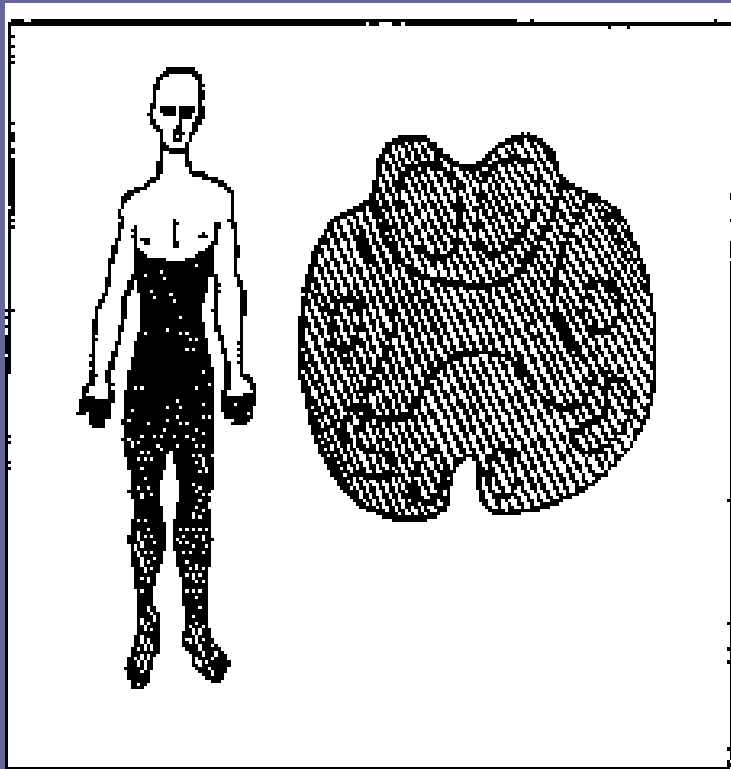


Figure 2-30: Complete spinal cord transection

- ▣ Paraplegi UMN di bawah lesi, pada Tingkat lesi bersifat LMN
- ▣ Hipestesi setingkat lesi
- ▣ Tidak bisa defekasi dan miksi
- ▣ Gangguan otonom

LESI MYELUM HEMITRANSVERSAL

SINDROMA BROWN-SEQUARD

- ☐ Hemiplegi ipsilateral setinggi lesi (LMN)
- ☐ Kelumpuhan ipsilateral UMN di bawah Tingkat lesi
- ☐ Defisit sensorik proprioseptif ipsilateral
- ☐ Defisit sensorik protopatik kontralateral

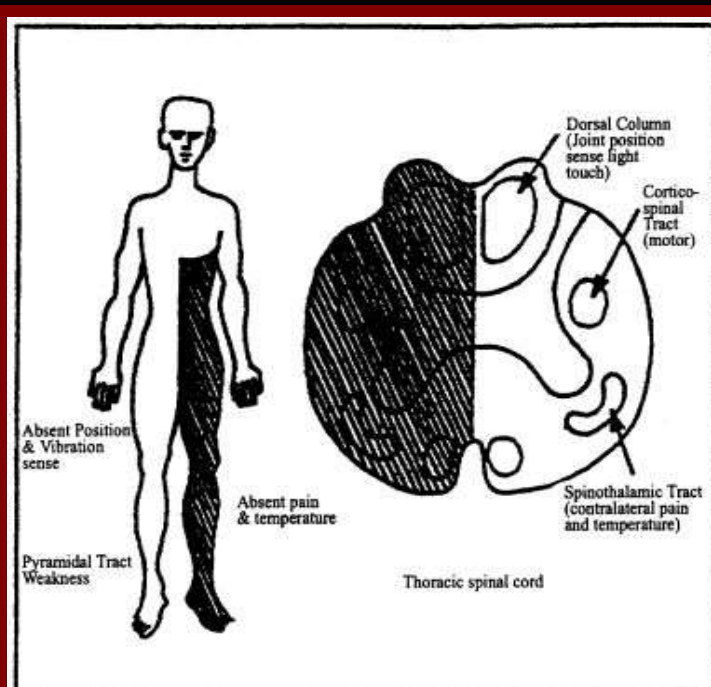


Figure 2-27: Brown-Séquard Syndrome (Unilateral hemi-cord lesion).

Noyaux gracile et
cunéiforme

HEMISECTION DROITE
(sur Th 6 par ex.)

Th 6

Voie lemniscale
(cordon post.)

Voie cortico-spinale
croisée

Voie spino-thalamique ST
(thermo-algésique)

DU COTE
(HOMOL.)

** Syndrom
(S. su

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RESUME

- Hemiparese / hemiplegia

Tipika → hemisfere
Alternans → brainstem

- Involuntari movement :

- ggn pd susunan ekstrapiramidal.

- Ggn. Koordinasi , Keseimbangan, tonus:

- ggn pd serebellum.

- Gangguan medula spinalis :

- Gangguan motorik
- Gangguan sensorik
- Gangguan autonomik
- Setinggi servikal tetraparese
- Setinggi thorakal paraparese



Terima Kasih

SEMOGA BERMANFAAT

