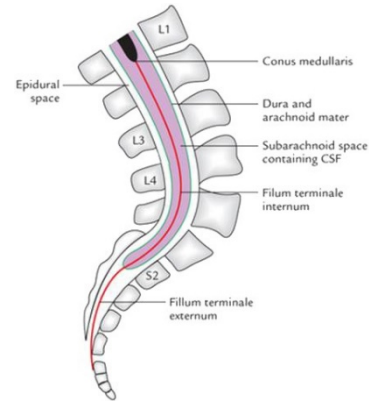


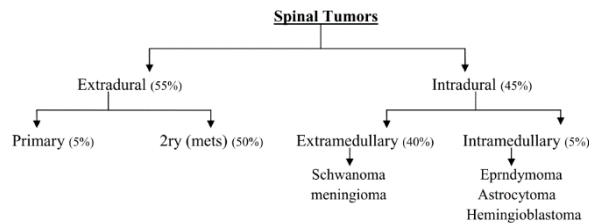
Spinal Tumors Notes

■ Anatomy:

- Cord until L1/L2, then we have the filum terminale (ependyma, pia) which ends at S2.
- Dura ends at S2
- Filum terminale externum ends at the coccyx
- Denticulate ligament = connections from the pia through the arachnoid and attaches to the dura 'centralize'.



- Spinal tumors are most commonly secondary (mets) and malignant.
- Disc and dura resist metastasis



■ Classification:

1- Extradural:

a- Malignant

- Most common, older people, mainly mets, **start in the vertebra** (body, pedicle) into the extradural space compressing roots/cord.
- Arise from bilateral structures (lung, kidney, breast, prostate).
- Osteolytic, but prostate is osteoblastic.
- Thoracic, but prostate favors lumbar (Batson's plexus of epidural veins)

b- Benign

Occur in the extradural space:

- Bone = hemangioma (white spots in bone)
- Nerves sheath = schwannoma or neurofibroma
- Dura = meningioma

Other: lipoma

2- Intradural:

a- Extramedullary

- 1- **Meningioma:** slowly growing, from arachnoid cap cells, benign, women 50-60, dorsal region, thoracic spine, pain due to chronic compression (chronic UMN signs), iso to hypertense, enhance well.

Typical patient: old woman, dorsal pain, long history, gradual loss of sensation and weakness over months

- 2- **Nerve sheath tumor** (schwannoma, neurofibroma): dorsal root sheath, benign, slow, dumb-bell, NF1, 30-50, pain with LMN/UMN signs.

⇒ **Note:** meningioma (myelopathy), NST (radiculopathy later may affect the cord too).

- 3- **Filumterminale tumor:** male 40-50, mostly the prox. Portion.

b- Intramedullary

- 1- **Astrocytoma:** from the spinal cord, children, male, thoracic > cervical

- 2- **Ependymoma:** more common, adults, male 30-50, CSF cap, separated from the spinal cord by a plane of cleavage → allows complete resection (sausage-like), arise from:

- a- Filum terminale among the cauda equina (sausage-like), myxopapillary type.
- b- In the cord, fluid-filled cyst (syrinx), indolent, encapsulated.

- 3- **Hemangioblastoma:** benign, well circumscribed, intra > extra, polycythemia

- 4- **Mets** are rare

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- **Clinical Presentation:** They present as:

1- Pain:

- Severe, nocturnal pain = Mets of the vertebra causing cord compression
- Electrical, shooting pain = Affecting the root
- Dull aching, constant, gnawing = cord lesion

- 2- **Neuro deficits** (motor, sensory, autonomic), depends on the type and level:

- **Acute compression 'Below its level':** flaccid paralysis, sensory low below the level, absent reflexes, mute plantar, urine retention, lost anal tone. Example: acute vertebral collapse due to mets.

- **Chronic compression 'Below its level':** UMN Sx; increased tone, exaggerated reflexes, Babinski

⇒ **At their level in both types:** LMN Sx + sensory manifestations

- **Dorsal intradural extramedullary neurofibroma** = Brown-Sequard Syndrome:
 - **Below the level:**
 - a- **Ipsi** → Root signs, UMN signs: weakness begins distally, hyperreflexia, hypertonia, Babinski
 - b- **Contra** → Impaired pain and temp. / numbness
 - **At its level:** abnormal sensation (pain or burning)
 - Increased ICP (in upper cervical tumors), sensory ataxia, sphincters are affected (late), pain in filum terminale (+ with recumbency, neck flexion / - with paracetamol)
- **Intramedullary tumor** → loss of pain and temp in a cape fashion with sacral sparing + UMN signs below the level.

- **Dx:**
 - We do Xray, then MRI. For bone pathologies suspicion, we do a CT.
 - Lumbar puncture: increase protein in 95% of intramedullary tumors (esp. ependymoma).
 - CT scan: to differentiate between extramedullary vs. Intramedullary
- **Management:**
 - Spinal cord tumors are treated by surgery aiming for excision or relief of compression.

Benign	- Excise, if difficult, debulked
Mets	- Post or posterolateral = decompressive laminectomy > RT - Anterior = corpectomy and fusion > RT - Lymphomas = steroids
Meningioma, Schwannoma, Neurofibroma	- Excision via laminectomy - Remove dural attachment - Schwannoma = shave nerve roots - Neurofibroma = excised or partial resection - Dumb-bell = 2 stage operations - No place for RT
Ependymomas, Astrocytoma	- Laminectomy and myelotomy - Cord ependymoma = shelled-out, when ass. with a syrinx - Filum terminale = removed with it. - No need for RT