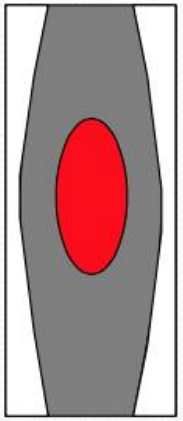
Intramedullary Tumors

- Primary tumors – much more common
  - Ependymoma
  - Astrocytoma

  } ~ 90-95% of all intramedullary tumors
  - Hemangioblastoma
  - Subependymoma, Oligodendroglioma, Ganglioglioma (rare)
- Secondary tumors – metastases
  - Lung, breast, renal, gastric
  - Lymphoma, leukemia
  - Melanoma



Pathology

- 80-90% low grade
  - Pilocytic astrocytoma = WHO I
    - Rosenthal fibers
    - Low prevalence of nuclear atypia/mitoses
  - Fibrillary astrocytoma = WHO II
    - ↑ cellularity, variable atypia/mitoses
    - Parenchymal infiltration
- 10-15% high grade
  - Anaplastic astrocytomas = WHO III
- Remember inflammatory lesions in differential

Astrocytoma

- Approximately 40% of cord tumors
  - Most common pediatric intramedullary tumor
  - In adults, presents in third to fifth decade
- Pathology: fibrillary (46%), pilocytic (54%)
- More infiltrating than ependymoma → complete resection seldom possible
- Unlike brain, usually low grade (85-90% ped/75% adults); GBMs rare (0.2-1.5%)
- Unlike brain, often enhances, even if low grade

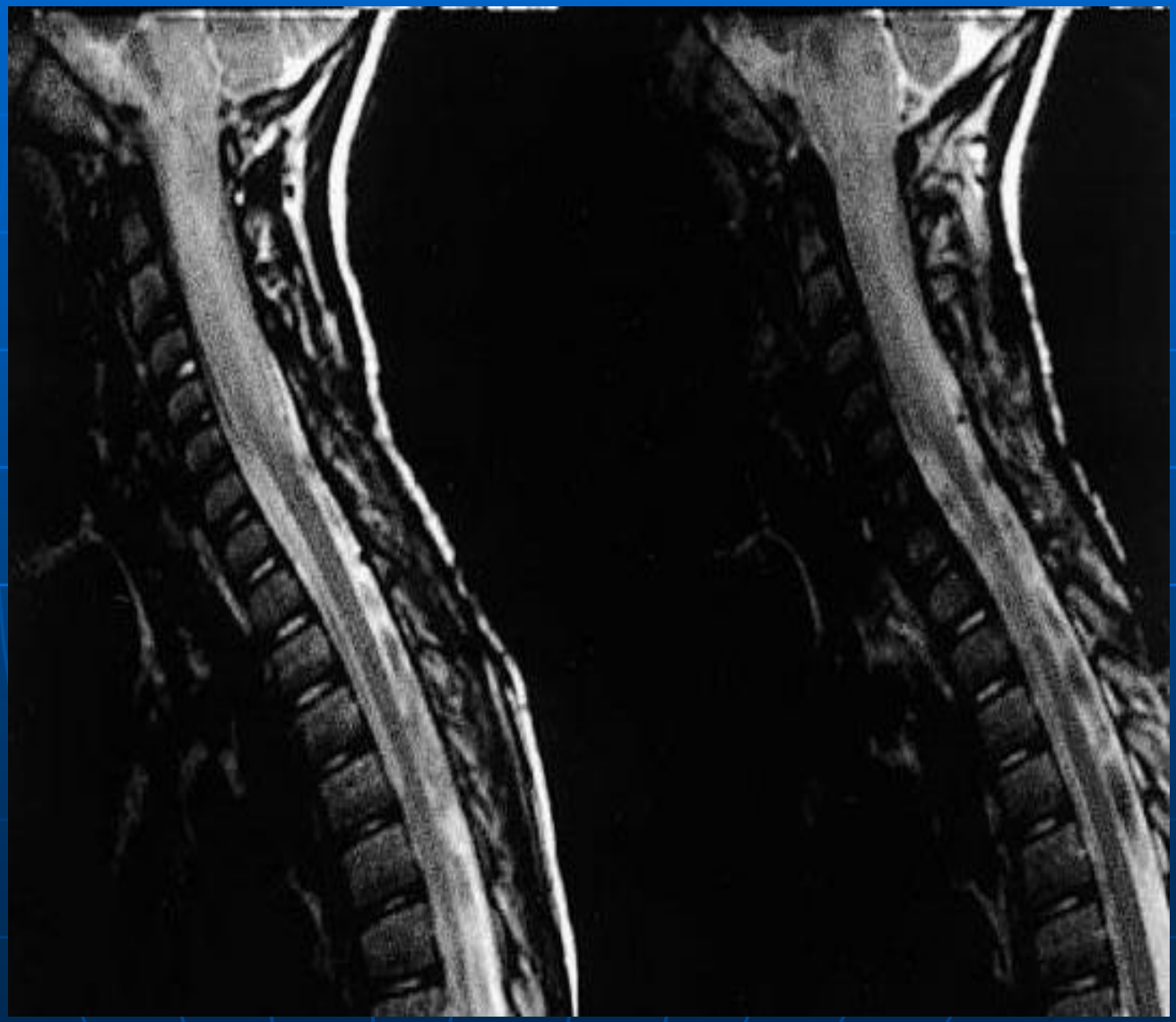
Imaging

- Cervical > thoracic > lumbar locations
- Usually 1-3 cm, < 4 segments in length
- Oblong, fusiform expansion of cord
- 40% have tumor cysts or syringohydromyelia
- Solid portion hypo-/isointense on T1WI, hyperintense (but not fluid bright) on T2WI MR
- Mild to moderate enhancement
- Rarely hemorrhagic

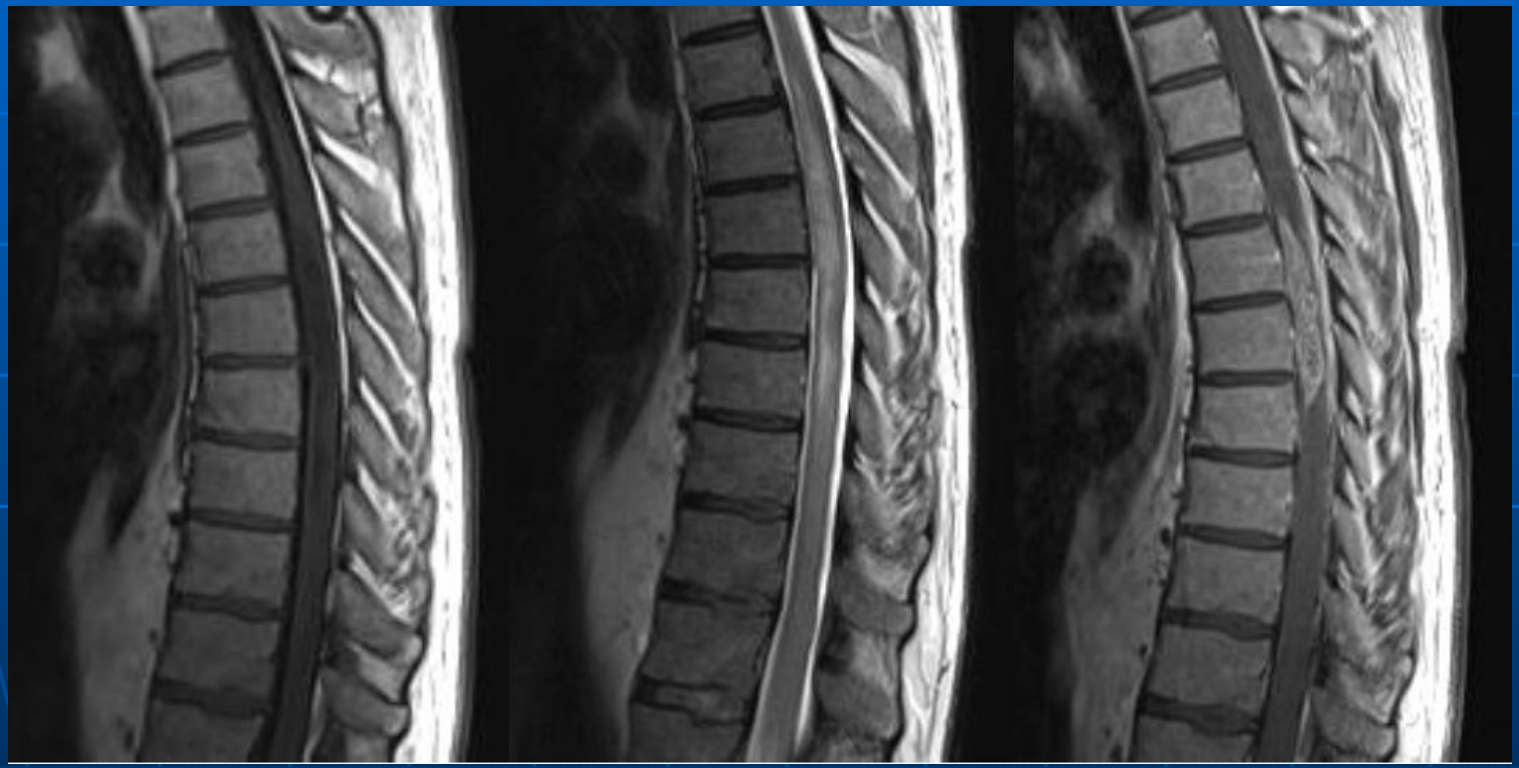
T2 - Astrocytoma

Most common in child

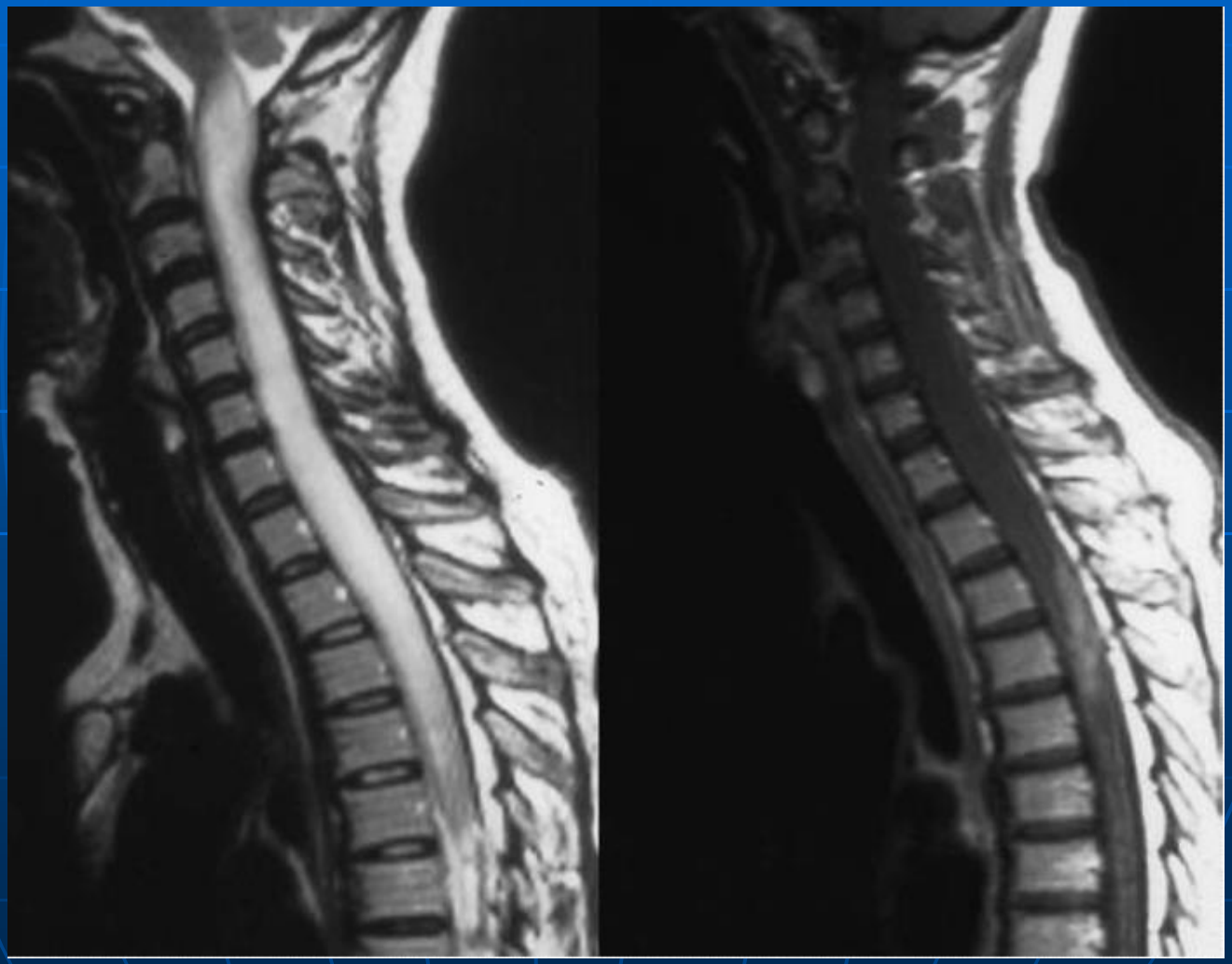
Almost Always enhance, even when low grade, unlike brain.

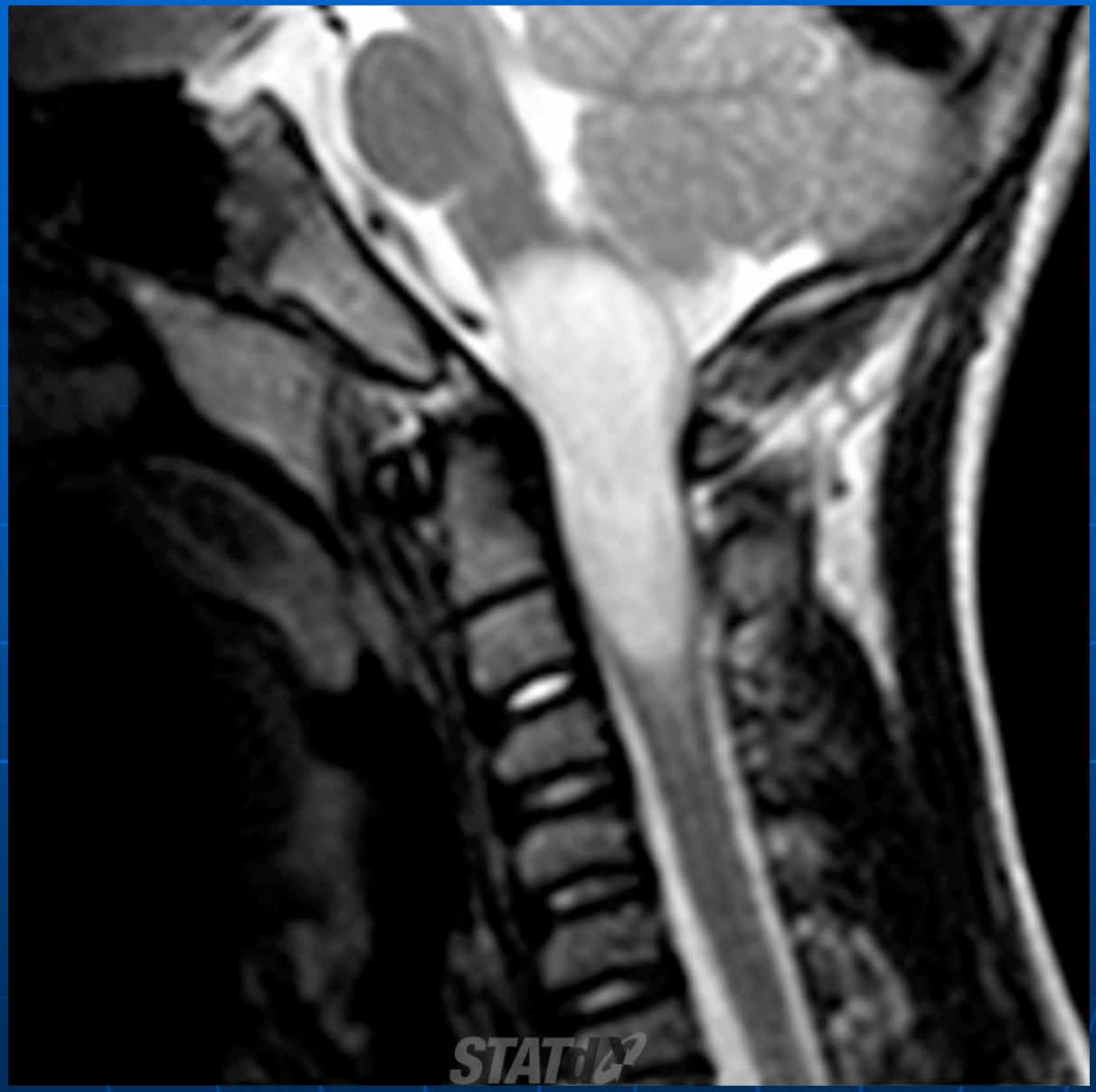


Cord GBM



Astrocytoma





Sagittal T2 MR shows an expansile hyperintense cervicomedullary junction astrocytoma in a 7-year-old boy with neck pain. Despite the crucial location, these tumors are often only mildly symptomatic.