Syringomyelia

- Hydromyelia
  - cystic central canal dilatation
- Syringomyelia
  - cystic collection, or syrinx, that occurs within the spinal cord around the central canal, not within.
  - Syringobulbia = brainstem syrinx extension
  - Syringocephaly = brain/cerebral peduncle syrinx extension
- Syringohydromyelia
  - features of both syringomyelia and hydromyelia
- "Presyrinx state"
  - reversible spinal cord edema produced by alterations in CSF flow dynamics

Syringomyelia

- Syrinx
  - is the collective name given to hydromyelia, syringomyelia, syringobulbia, syringopontia, syringomesencephaly, and syringocephalus.
- Syringomyelia
  - refers to a cystic collection, or syrinx, that occurs within the spinal cord around the central canal.

Syringomyelia

- Although syringomyelia is distinct from hydromyelia, in which there is simply dilatation of the central canal, it is very difficult to distinguish the two on imaging.
- Hence, the collective terms **hydrosyringomyelia** or **syringohydromyelia** can also be used to describe this fluid collection within the cord.

Pathology

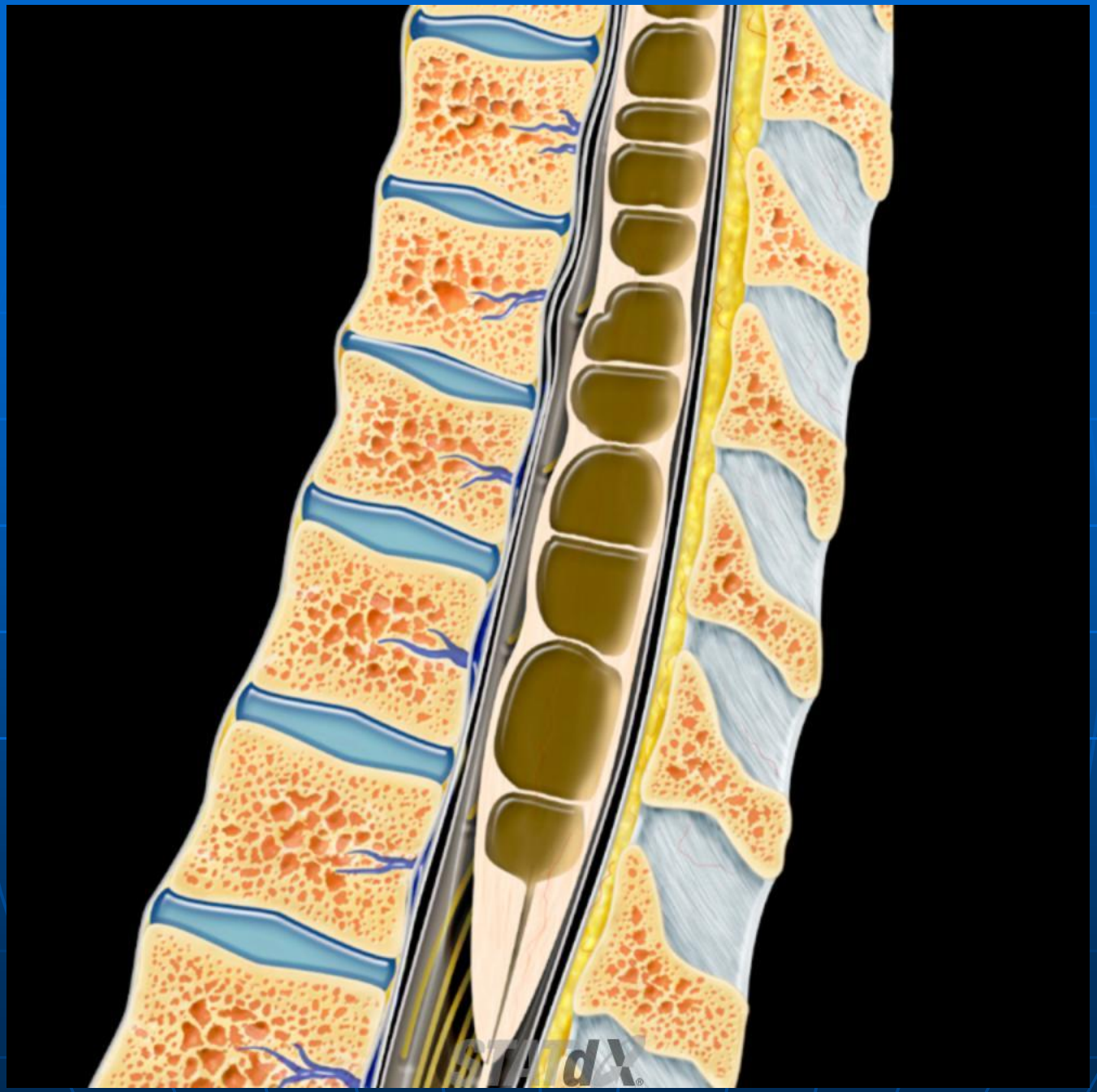
- Hydrocephalus
- Chiari 1 or 2 malformation
- Myelomeningocele
- Other spinal dysraphism
- Tethered cord,
- Congenital scoliosis
- Spinal cord injury

DDX:

- **Ventriculus Terminalis**
  - Asymptomatic (normal) dilatation of terminal cord central canal only
- **Cystic Spinal Cord Tumor**
  - Cord expansion, cystic cavity surrounded by abnormal T2 signal, nodular enhancement
- **Myelomalacia**
  - Cord volume loss, gliosis
  - No CSF signal cavitation on T1WI

Checklist

- **Consider**
  - Syrinx etiology influences treatment approach
  - Despite septated appearance, large syrinx cavities usually contiguous
- **Image Interpretation Pearls**
  - Simple syringomyelia rarely enhances or produces diagnostic dilemma
  - Contrast administration essential to exclude tumor in complicated cavitary lesions



Sagittal graphic demonstrates a large, sacculated, "beaded" spinal cord syrinx extending to the conus. Despite the loculated appearance of large syringes, the individual fluid spaces are contiguous and drainable using a single shunt catheter.

Sagittal T2WI FS MR (Chiari 1 malformation) shows inferior displacement of pointed ectopic cerebellar tonsils (white solid arrow) below the foramen magnum. Note associated cervical syringohydromyelia (white open arrow).

Sagittal T2WI MR shows low-lying spinal cord at L2/3 with terminal syringohydromyelia (white solid arrow).