Chiari I Malformation with Impending Syrinx
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History
4 year old asymptomatic patient; follow up Chiari I malformation.

Diagnosis
Chiari I Malformation with Impending Syrinx

Discussion
The pathogenesis of syringomyelia may be explained by 1) Communication of hydrocephalus between the 4th ventricle and central canal as a result of outlet foramina obstruction, 2) Non-communicating related to reduced resorption of CSF at the level of the spinal subarachnoid space, or 3) Extracanalicular related to leukomalacia from ischemia, trauma or hemorrhage. Noncommunicating syringomyelia is often seen with Chiari I malformation, cervical spinal stenosis, basilar invagination and arachnoiditis. Normal CSF flows from the spinal subarachnoid space into the perivascular spaces and interstitium of the spinal cord towards the central canal and is driven by pulsatile (arterial and/or transmitted CSF pulsations) and bulk flow. The location of the syrinx may be remote from the site of CSF obstruction secondary to normal variations in patency of the central canal. The central cord edema seen in this case represents disturbed CSF flow related to obstruction at the foramen magnum, the so-call "pre-syrinx". Relief of the CSF obstruction usually results in reversal of cord edema and prevention of progression to syrinx.

Findings
MR-Sagittal T1, T2, and IR and axial T2 images show downward displacement of the cerebellar tonsils which have a peg-like configuration. Also, note the subtle T2 and IR hyperintensity in the cord near the obex and the flagrant long segment central hyperintensity at the cervicothoracic junction.

Reference
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