

Loss of Temperature

No-sign on Thermometer

The anterior expansion of a syrinx may compress the anterior white commissure, which is the decussation for fibers of the spinothalamic tract. This tract carries pain and temperature. Thus, bilateral loss of pain and temperature may be evident on physical exam. Radicular pain may still be felt, but external nociception (e.g. pinprick) will be dulled.

Muscle Weakness

Weak Drooping-muscle

Extension of the syrinx anteriorly can cause compression and dysfunction of the corticospinal tract neurons. This can result in muscle weakness, atrophy, or even paralysis that usually starts distally and progresses proximally given the arrangement of fibers in the spinal cord. The dorsal (posterior) column is initially spared since the cystic cavity tends to expand anteriorly and laterally. However, in advanced cases, patients may begin to lose dorsal column functions like proprioception and vibration sense beginning in the lower extremities.

Horner Syndrome

Horny-PAM

If the syrinx is around the upper thoracic region (T1-4), the hypothalamospinal tract, which carries sympathetic fibers to the face, may be affected. This interruption will result in Horner syndrome (a.k.a. oculosympathetic paresis), classically yielding unilateral miosis, ptosis, and facial anhidrosis.

Diagnosis

MRI

M-R-eyes Machine

MRI of spine and spinal cord with and without contrast allows visualization of syrinx in both sagittal and axial planes. It can show cystic lesions, their location, size, and extent. It can also show the degree of cerebellar tonsillar ectopia, arachnoid scarring, spinal tumors, and leptomeningeal enhancement (sign of infection). Repeated MRI scans are used to monitor the progression.

Management

Supportive Care

Supportive IV bags

Most syringomyelia patients will first undergo supportive care, which includes analgesics, physical therapy, and education to avoid activities that increase intracranial pressure (ICP) e.g. lifting heavy objects, jumping.

Surgery

Surgeon

If signs and symptoms of syringomyelia worsen or there is a surgical cause of syrinx development (e.g. tumor), surgery is recommended to reduce the pressure of the syrinx and to return the CSF circulation back to normal. The type of surgery depends on the underlying pathology. Some patients may only need decompression via CSF shunting while others may need syringotomy, laminectomy, or tumor resection.