

Post-Traumatic Syringomyelia and Tethered Spinal Cord

Post-traumatic syringomyelia (sear-IN-go-my-EEL-ya) and post-traumatic tethered spinal cord are conditions that can occur following spinal cord injury and can result in progressive deterioration of the spinal cord. Syringomyelia (SM) is a disorder in which a cyst forms within the spinal cord. This cyst, called a *syrinx*, expands and elongates over time, destroying the center of the cord. It occurs in approximately 1 to 3 percent of spinal cord-injured individuals. Post-traumatic tethered spinal cord is a condition that can occur following injury to the spinal cord. Scar tissue forms and tethers or holds the spinal cord to the soft tissue covering, preventing normal flow of spinal fluid. Tethering of the spinal cord has been suggested as a cause for the formation of cysts in the spinal cord.

Causes

- Congenital developmental problems of the brain and/or spinal cord.
- Trauma to the spinal cord such as a car accident or serious fall.
- Meningitis, hemorrhage, tumor, arachnoid scarring.

Any number of medical conditions that cause an obstruction in the normal flow of cerebrospinal fluid can result in syrinx formation. Cerebrospinal fluid fills the syrinx and pressure difference along the spine causes the fluid to move within the cyst, causing the cyst to grow and further damage the spinal cord. The condition may lie dormant and undetected for months or years until a symptom or variety of symptoms become bothersome enough to warrant medical attention. Many people with SM are not diagnosed until midlife or even years after a spinal cord trauma.

Symptoms

When the syrinx widens enough to cause damage to the spinal cord, the resulting symptoms may be:

- Pain: primary symptom.
- Weakness.
- Stiffness in the back, shoulders, arms, or legs.
- Progressive loss of sensation or strength.
- Inability to feel extremes of hot and/or cold.
- Hypersensitivity/parathesias.
- Spasticity.
- Autonomic dysreflexia.
- Difficulty swallowing.
- Headaches.
- Disruption in body temperature.
- SM may also adversely affect sweating, sexual function, and bowel and bladder control.

Treatment

Many individuals with spinal cord injuries have a cyst at the site of the original injury. These cysts do not always require treatment. However, if they grow larger or begin to cause symptoms, treatment may be recommended.

If the individual experiences progressive loss of sensory and/or motor function, surgical intervention may be considered. This surgery, called *expansive duraplasty*, involves releasing the scar tissue around the spinal cord and restoring the free flow of spinal fluid around the spinal cord. In some patients, it may be necessary to drain the syrinx by placing a shunt. By draining syrinx fluid, a shunt can arrest the progression of symptoms and relieve pain, headache, and tightness. Whether treated or not, many individuals will be told to avoid activities that involve straining.

Drugs have no curative value as a form of treatment for syringomyelia. A delay in treatment may result in irreversible spinal cord injury. Recurrence of syringomyelia after surgery may necessitate additional operations.

Dr. Scott Falci, MD, neurosurgeon at Craig Hospital in Denver, in collaboration with the Karolinksa Institute in Stockholm, Sweden, is researching the effectiveness of using human embryonic spinal cord tissue to obliterate spinal cord cysts. Although this is not yet an FDA-approved procedure and is still very experimental, this adjunct therapy is showing promise.

What you should know as a claims professional or rehab provider

- Be aware that delayed, subacute, or progressive neurologic deterioration in SCI persons should raise the suspicion of post-traumatic syringomyelia.
- Encourage annual or biennial SCI reevaluations.
- Understand that syrinx formation is best diagnosed by MRI scanning.
- Ensure patient is referred to a board-certified neurosurgeon who has experience in treating SM.
- Discuss access to Cine MRI facility (shows spinal fluid movement) for more definitive diagnosing.
- Know that delaying treatment may cause permanent spinal cord injury.
- Understand that not all cysts require treatment.

For a list of providers that have experience in treating syringomyelia, go to www.thesmfoundation.org and click on References.

Sources:

1. SCI-Info-Pages. "Other Spinal Cord Injury Health Issues." [Online] 03 November 2006. http://www.sci-info-pages.com/other_issues.html
2. "Possible Symptoms of Syringomyelia." [Online] 04 January 2008. <http://www.syringo.org>
3. <http://nervous-system.emedtv.com/syringomyelia>
4. Craig Hospital. "Rehabilitation Neurosurgery." [Online] 03 January 2008. <http://www.craighospital.org/SCI/rehabNeurosurgery.asp>