Key Points

1. Similar to Chiari, increased use of MRIs has found small syrinxes in some people with few or no symptoms
2. Batzdorf referred to these as slit-like syrinxes and showed they tend to be stable over time
3. Further hypothesized they are actually just remnants of the central canal which didn't close completely
4. German researchers looked at a group of suspected syringomyelia patients
5. Using imaging and exams identified patients with no readily apparent cause of the syrinx
6. Termed these hydromyelia and tracked over time
7. Found that 85% either improved or remained stable
8. Much different than true SM patients where many got worse over time

Definitions

central canal - tube like opening in the middle of the spinal cord; closes as people age

cervical - upper part of the spine, the neck region

electrophysiological testing - diagnostic tests which use electricity pulses to check nerve conductivity and reveal nerve damage

hydromyelia - used differently by different people, but generall refers to something that looks like a syrinx on MRI, but is contained in the central canal

idiopathic - of unknown origin

meningitis - inflammation of the lining of the brain

scoliosis - abnormal curvature of the spine

syringomyelia - condition where a fluid filled cyst forms in the spinal

Study Differentiates Hydromyelia From Syringomyelia

July 31st, 2009 -- Similar to Chiari, the increased use of MRIs has revealed that some people have small syrinxes with few to no symptoms. A recent study out of Germany has termed these cases hydromyelia, developed criteria for differentiating them from syringomyelia, and shown that most people with hydromyelia will not get worse.

In practice the terms syringomyelia, hydromyelia, and syringohydromyelia have not been used consistently, and in some cases interchangeably. Some people use the term hydromyelia to refer to a cavity which is contained within the central canal, while others use syringohydromyelia to refer to this type of finding. Still others will use syringomyelia to refer to a syrinx found anywhere.

While confusion in terminology is not unusual in the medical field, in this case it also reflects an underlying problem. Specifically, are there "syrinxes" (for lack of a better word) which show up on MRI, but do not cause problems for patients, aren't likely to get any worse, and don't require treatment. Batzdorf published on this subject a number of years ago and identified slit-like syrinxes, which were very narrow and fully contained in the central canal. In fact, Batzdorf hypothesized that the MRI findings actually reflected central canals which did not full close as opposed to true syrinxes (the central canal is an opening in the middle of the spinal cord which tends to close as we age). As such, people with slit-like syrinxes were shown to not get any worse over a long period of time, and not require surgery.

Now, a German group of researchers has gone further and identified how many people out of a group evaluated for syringomyelia actually have what they called hydromyelia, a small, slit-like finding on MRI of questionable significance. The researchers started by reviewing 142 cases and removed anyone with obvious causes of syringomyelia, such as Chiari, evidence of spinal trauma, tumors, and severe scoliosis (Table 1). Out of this first cut, they found 50 people with idiopathic syrinxes, meaning there was no readily apparent cause.

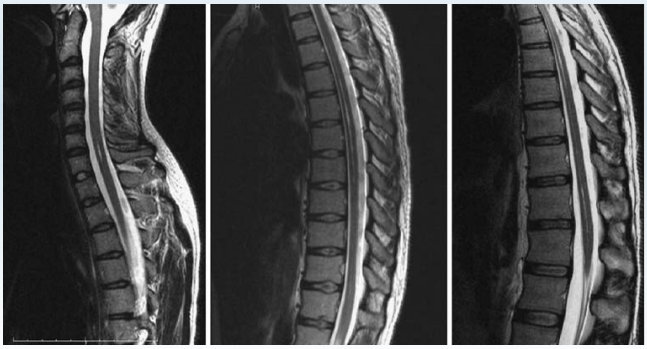
Table 1: Classification of Suspected Syringomyelia Cases (142 Total)

Cause	%
Chiari	26
Trauma	19
Tumors	12
Scoliosis	5
Meningitis	2
Idiopathic	36

Note: The underlying cause of 10 of the idiopathic cases was found on further testing

Next, the researchers looked at more testing such as advanced MRI techniques, and electrophsyiological tests for nerve damage. Any objective nerve findings or widening of the spinal cord by more than 6mm were deemed to be syringomyelia and taken out of the group. Finally, the team ended up with 40 people with what appeared to be small syrinxes on MRI (Figure 1) but no discernable cause.

Figure 1: Examples of hydromyelia on MRI
(Right to Left: cervical, thoracic, lumbar)



The group consisted of 25 women and 15 men with an average age of 36. The average width of the cavity in this group was 2.7mm and the average length was 3.5 vertebrae. Interestingly, more than two thirds of the

cord

syrinx - fluid filled cavity in the spinal cord

thoracic - middle part of the spine, the chest area

lumbar - lower part of the spine, the lower back area

Common Chiari Terms

cerebellar tonsils - portion of the cerebellum located at the bottom, so named because of their shape

cerebellum - part of the brain located at the bottom of the skull, near the opening to the spinal area; important for muscle control, movement, and balance

cerebrospinal fluid (CSF) - clear liquid in the brain and spinal cord, acts as a shock absorber

Chiari malformation I - condition where the cerebellar tonsils are displaced out of the skull area into the spinal area, causing compression of brain tissue and disruption of CSF flow

decompression surgery - general term used for any of several surgical techniques employed to create more space around a Chiari malformation and to relieve compression

Source

Defining the line between hydromyelia and syringomyelia. A differentiation is possible based on electrophysiological and magnetic resonance imaging studies. Roser F, Ebner FH, Sixt C, Hagen JM, Tatagiba MS. Acta Neurochir (Wien). 2009 Jun 16

hydromyelia group reported pain, including some burning neuropathic pain, which was the reason for the MRI in the first place. However, none of the hydromyelia patients had objective neurological deficits, such as is common with syringomyelia patients. In addition, the researchers found that over a long period of time - more than 3 years - 85% of the hydromyelia patients reported that their symptoms were either stable or improved, which was much higher than syringomyelia patients.

Interestingly though, in responses to formal surveys regarding the impact on their health, there was no difference between the hydromyelia group and the syringomyelia group. In discussing their findings, the authors point out that it can be difficult to differentiate between hydromyelia and syringomyelia, but that it is important to do so. If a person is told they have syringomyelia and then read about how terrible it can be, it can have a large psychological impact. They propose that electrophysiological testing can play a key role in differentiating the two. They further propose a definition for hydromyelia based upon patients with a centrally located slit-like cavity, with no neurological deficits, no findings on electrophysiological testing, no indication of a condition which leads to syringomyelia, but reports of pain.

And that last part is what makes this so difficult for some people. They are experiencing pain, but are told by doctors that their syrinx is too small to cause problems. While it is not clear in these cases what the cause of the pain is, the evidence is pretty clear, that in most of these cases the syrinx like cavity will not get bigger over time.

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