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Anita Tayyebi holds a master's degree from the Seattle Institute of East Asian Medicine and is pursuing her doctorate in acupuncture at Bastyr University. Over ten years in practice in Olympia, WA, she has integrated traditional Chinese and Japanese acupuncture with craniosacral therapy to address chronic pain and improve mental health. She recognizes the deep connection between body, mind, and spirit, and her treatment approach is personalized and empowering. She is passionate about educating patients on self care, sharing practical Chinese medicine insights and tools for everyday well being, and supporting long term healing and balance to help people in her care achieve optimal health.

# Acupuncture for Pain and Headache Associated with Syringomyelia: A Case Report

By Anita Tayyebi, LAc

#### Abstract

Syringomyelia is characterized by the development of fluid-filled cysts within the spinal cord, leading to a range of neurological symptoms. This case report discusses the treatment of a 57-year-old male with acquired syringomyelia, which caused severe pain and headaches and significantly impacted his daily life for over ten years before he was introduced to acupuncture six years ago. Initially, the patient experienced constant pain with a visual analog scale (VAS) score of 7 (on a scale of 1-10, with 10 being the worst) and relied on narcotics and muscle relaxants for symptom management. However, with regular acupuncture treatments, he was able to manage his pain more effectively, reducing his VAS score to 2-3 out of 10, discontinuing narcotic use, and experiencing significant improvements in quality of life, mood, and sleep.

This case report highlights how traditional Chinese medicine (TCM) diagnostic tools, a tailored treatment plan, regular acupuncture sessions, and cupping therapy provide valuable support and relief for patients with this rare and complex biomedical condition.

**Keywords**: case report, syringomyelia, acupuncture, headache, TCM, quality of life

## Introduction

Syringomyelia is the formation of cerebrospinal fluid (CSF) cysts (syrinx) within the spinal cord. Typically, syrinxes are formed due to disruptions in the flow of CSF in the spinal canal. Syringomyelia can be congenital, as a result of Arnold-Chiari malformation (known as Chiari malformation), or acquired due to spinal cord injuries caused by tumors, meningitis, vascular disturbances, or idiopathic in nature. Chiari malformation is a congenital condition in which

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Citation: Tayyebi, A. (2025). Acupuncture for Pain and Headache Associated with Syringomyelia: A Case Report. *Convergent* Points, 4(1). www.convergentpoints.com Editor: Kathleen Lumiere, Bastyr University, UNITED STATES Received: January 21, 2024 Accepted: January 31, 2025 Published: February 15, 2025 **Copyright**: © 2025 Tayyebi. This open-access article is distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All relevant data are within the paper and its supporting information files. Funding: This article received no funding of any type.

**Competing Interests**: The author has declared that no competing interests exist.

brain tissue extends into the spinal canal. It is categorized into three types based on the size of the tonsillar herniation; the longer the herniation extends, the more neurological symptoms it may cause.

According to data published in the Journal of Genetic Counseling, it is estimated that between 182,075 and 234,631 Americans have syringomyelia, which means approximately 1 in 1,172 to 1 in 1,510 individuals are affected. This suggests that the condition is at least ten times more prevalent than previously believed (Speer et al., 2003).

Some patients with syringomyelia remain asymptomatic, while others experience a wide range of neurological issues that can progress slowly or rapidly over the years. The syrinx can grow large enough to damage the spinal cord and compress the sensory and motor nerve fibers that carry messages between the brain and the body. Symptoms depend on the location of the syrinx(es) and how far they extend into the cord. They can be unilateral or bilateral and often present with pain, weakness, and stiffness in the shoulders, back, neck, or legs. Additional symptoms may include headaches, numbness in the hands and feet, body temperature imbalances, loss of balance, bowel and bladder control issues, loss of sexual function, and scoliosis.

The primary goal of treatment for syringomyelia is to restore the normal flow of CSF. In individuals with Chiari malformation, posterior fossa decompression surgery may be suggested. For acquired cases, surgical options may include laminectomy with duraplasty to achieve spinal decompression, removal of tumors or scar tissue, and, in rare cases, shunting the syrinx may also be considered. However, surgery is not always the optimal treatment. According to a study published in the International Spinal Cord Society journal, only half of the patients undergoing laminectomy for posttraumatic syringomyelia achieve satisfactory long-term outcomes (Ushewokunze et al., 2010).

## **TCM Perspective and Biomedical Mechanism**

TCM has proven to be an effective approach for pain management and reducing headaches. Acupuncture can assist patients with syringomyelia in managing their symptoms, improving the quality of their lives, and potentially postponing or avoiding costly and unpredictable surgeries.

A study published in Frontiers in Neuroscience explores the use of acupuncture for treating neuropathic pain. The review analyzes 388 studies to understand better how acupuncture signals are produced, transmitted, and processed from the periphery to the central nervous system and acupuncture's effectiveness in treating neuropathic pain by demonstrating its impact on peripheral, spinal, and central nervous system mechanisms.



Acupuncture reduces pain perception at the peripheral level by inhibiting overactive pain-related ion channels, while at the spinal cord level, it decreases neuroinflammation by downregulating pro-inflammatory pathways. Additionally, it activates the descending pain control system in the brain, enhancing the body's natural ability to regulate pain through endogenous opioids and neurotransmitters.

The study identifies acupuncture as a distinct therapeutic modality for pain. It is safe, with no adverse effects, and is often well tolerated by patients, whereas pain medication may cause side effects, and many patients may not experience optimal relief at the tolerated dosage (Finnerup et al., 2015).

## **Patient Information and Case Description**

This is a case of a 57-year-old male with acquired syringomyelia diagnosed over ten years previous to acupuncture treatment. The patient's symptoms initially presented in his late thirties, characterized by pain in the mid to upper back, along with right shoulder and neck stiffness. Initially, the pain was intermittent and responded to physical therapy, massage, and over-the-counter pain medications. However, it progressively worsened, requiring daily use of muscle relaxants and opioid-based pain medication. This prompted further investigation by his physician, which led to identifying a syrinx extending from the T3 to T8.

The patient had a history of a rollover car accident at age 28 and a ski accident in high school; however, he was able to fully recover and return to normal activities. At age 45, he was diagnosed with prostate cancer, underwent radiation therapy, and has been in remission ever since. The radiation caused fatigue, which remains one of his ongoing complaints.

The patient experienced constant pain, with a VAS score of 7. The pain would escalate to 9 or even 10 at times, presenting as sharp pain between the T2 and T7 levels of the thoracic spine. He reported that as the pain intensified, the temperature in the area also rose, and the muscles began to seize up, restricting the range of motion in his right shoulder. When the tissue tightened, the discomfort radiated to the occipital region, often triggering a tension headache that would start in the back of the head and spread throughout the entire head.

The pain disrupted his sleep, exacerbated his anxiety, and significantly impaired his work performance to the point where he requested early retirement. While this decision alleviated some of his responsibilities and stress, it also led to social isolation and depression.



Approximately six years ago, he was introduced to acupuncture through a friend, an experience he described as life-changing. Since then, he has been able to manage his symptoms through regular acupuncture treatments, daily stretching, breathing exercises, and adherence to an anti-inflammatory diet. He now uses pain medication only as a last resort and is pleased to report that he rarely needs to rely on it.

## **Clinical Findings and Physical Examination**

The patient sought treatment at this office after his previous acupuncturist relocated. He expressed significant anxiety about transitioning to a new practitioner and reported increased pain levels due to the gap in treatments. The patient appeared thin and slender, frequently sighing while expressing frustration with his medical doctors' treatment approaches.

The patient's pulse was tight and choppy on both sides, with a deficiency in the third position. His tongue appeared slightly puffy, with red and peeled sides and minor cracks in the middle. Manual palpation of the mid to upper back revealed noticeable tissue tightness and increased heat in the area. A layer of rash-like heat was also present around the right shoulder and mid-back regions.

## **Diagnostic Information**

The most accurate diagnosis for syringomyelia is through magnetic resonance imaging (MRI). The pathogenesis of syringomyelia is not precisely known, but several hypotheses exist. After a spinal injury, local ischemia, subarachnoid scarring, or spinal stenosis can interrupt CSF flow and cause pressure differences between the brain and spinal cord, gradually leading to the formation of a syrinx. An intermittent sharp increase in CSF pressure associated with fluctuations in spinal venous pressure is thought to be the underlying distending force (Kleindienst et al., 2020).

From a TCM perspective, syringomyelia is associated with phlegm accumulation in the Governing Vessel. In The Foundations of Chinese Medicine, Maciocia points out that the etiology of phlegm has three root sources: emotional causes, diet, and fluid metabolism. The primary cause of phlegm formation is Spleen deficiency, which occurs when the Spleen fails to transform and transport body fluids (Maciocia, 2005, p. 452).

Poor dietary habits, such as overeating, irregular eating, and excessive consumption of rich, sweet, cold, or raw foods, can impair the Spleen's function of transforming fluids. When the Spleen fails to properly transport and transform body fluids, these fluids accumulate and gradually become



phlegm. Phlegm is inherently sticky, obstructing the flow of qi and making it difficult to expel from the body. Over time, this chronic accumulation of phlegm can lead to blood stasis, which is another cause of pain.

In the case of syringomyelia, prolonged phlegm stagnation can eventually lead to stasis of qi and blood in the spinal region, contributing to the condition's progression. Over time, this stagnation can result in flaccidity and atrophy of the limbs (known as Wei syndrome) due to inadequate circulation and nourishment to the tissues.

In the three cases of syringomyelia seen in this clinic, the practitioner observed the presentation of Liver qi stagnation. Frustration of dealing with chronic pain, combined with the challenges of finding effective treatments, can significantly impact a patient's emotional state. This frustration, particularly if not addressed, can exacerbate the condition by causing the wood element to become overactive. An overactive Liver can, in turn, deplete the already weakened Spleen, further impairing its ability to transform fluids and increasing the accumulation of phlegm. This creates a vicious cycle of emotional distress, physical stagnation, and worsening symptoms.

The treatment of syringomyelia in TCM involves addressing both the physical and emotional aspects of the condition. The main goals are to promote the smooth flow of qi and blood by resolving phlegm accumulation, strengthening the Spleen, and soothing Liver qi, all of which help to improve fluid metabolism and restore balance to the body.

#### **Therapeutic Intervention**

A TCM-trained acupuncturist with ten years of experience performed the treatments in private practice. For the first seven visits, sessions were scheduled once a week. Due to noticeable improvement in symptoms, the frequency was reduced to every other week for the subsequent eight visits. Following that, the patient was scheduled every three weeks to keep pain under control.

The treatment plan included core acupuncture points to treat the root cause based on the patient's constitution and presentation, along with points on the shoulder and back to address local stagnation. Core points were needled bilaterally using dark blue Seirin needles (0.10 x 15 mm) with shallow insertion, aiming to achieve the deqi sensation (Table 1).



Table 1. Core point prescription		
Acupuncture points	Treatment principle(s)	
LR3/LI4	Move qi and blood	
КI7	Drain damp	
PC6	Regulate Liver/ relieve stagnant qi	
GB21	Release tension due to Liver qi stagnation	
SP3	Tonify Spleen	
SP9	Drain damp	
GB34	Clear Liver qi/ benefit lateral costal region	
LR8	Tonify Liver yin and blood	

Deqi is commonly translated as 'needle sensation' or 'the arrival of qi.' Additional points were needled between half to one cup depth using the Balance brand needles (0.16 x 30 mm) with the intention of trigger point release. The needles were retained when the deqi sensation was achieved for 30-35 minutes during each treatment (Table 2).

Table 2. Additional points		
Treatment	Acupuncture points	Treatment principles
1 to 3	R SI 11 R UB43 UB18 T7 HTJJ	Local point/ moves qi Resolve phlegm/ tonify Spleen/ local point Regulate Liver qi/ local point Local point near syrinx
4 to 7	R SI9 T8 HTJJ T5 HTJJ R UB 18	Shoulder pain Local point near syrinx Local point near syrinx Regulate Liver qi/ local point
8 to 12	T6 HTJJ T5 HTJJ R UB18 R SI 11	Local point near syrinx Local point near syrinx Regulate Liver qi/ local point Local point/ moves qi
13 to 18	R SI10 R UB17 T6 HTJJ T5 HTJJ R SI11	Shoulder pain Local point/ remove stasis Local point near syrinx Local point near syrinx Local point/ moves qi
18 to 25	UB18 R SI11 T7 HTJJ T6 HTJJ	Regulate Liver qi/ local point Local point/ moves qi Local point near syrinx Local point near syrinx



A few of the local points selected in the treatment were from the Hua Tuo Jia Ji (HTJJ) points. These are a group of acupuncture points located on both sides of the spinal column, approximately half a cun lateral to each spinous process. The HTJJ points are commonly used to address local pain and stiffness. Their strategic location along the spine also influences the ganglion nerve roots and their extensions to the internal organs, making them effective for musculoskeletal and organ-related issues. A study published in Hindawi on the use of HTJJ points with electroacupuncture found that bilateral needling at L4 and L6 HTJJ points significantly reduced neuropathic pain in rats (Jiang et al., 2018).

Additionally, running cupping was incorporated when tightness in the back tissue was detected upon palpation. Cupping is effective in alleviating musculoskeletal stiffness and pain. A study published in the Journal of Bodywork and Movement Therapies reviewed the use of dry cupping in 21 randomized controlled trials involving 1,049 participants with musculoskeletal pain and decreased range of motion. The study concluded that dry cupping significantly reduced pain (Wood et al., 2020).

### **Outcomes**

Acupuncture treatments aim to alleviate pain and improve overall function. Outcomes were assessed using patient-reported pain levels and the VAS score. The findings suggest that acupuncture was a beneficial therapy for managing symptoms related to syringomyelia, providing relief and improving the patient's quality of life (Figure 1).

The patient reported a dramatic and consistent improvement in pain levels, with his VAS score dropping to 2-3 out of 10. He noted that when the muscles tightened, his pain would not exceed a level of 6, decreased in duration, and alleviated by heat, stretching, and meditation. The patient reported that regular acupuncture treatments had been key in relieving his pain and headaches and restoring his ability to function. He could engage in household activities, gardening, and supporting his wife with tasks around the house. He noted the significant reduction in pain, and being more active had helped him regain his self-confidence, which, in turn, motivated him to maintain a daily routine of stretches, walking, and meditation.

The patient also mentioned that he was no longer relying on oxycodone to manage his symptoms. Instead, he had committed to an anti-inflammatory diet, which he felt had contributed to his progress. He reported a noticeable decrease in the heat sensation in his shoulder area, stating that it no longer felt like his back was "on fire."

Upon palpation, the practitioner confirmed this improvement, noting that the tissue temperature in the affected area was still slightly higher than the opposite side but much lower than previously. Additionally, there was no visible red rash in the area. The practitioner also observed less rigidity in the shoulders and upper back muscles.

The patient did not know whether the syrinx size had changed unless new MRI imaging had been performed. However, the patient's insurance stopped covering MRIs six years ago due to consistent findings regarding the syrinx size and the symptoms' stability. They would only approve imaging if the patient developed new symptoms.

Figure 1: In office VAS scale per treatment.



#### **Treatment Number**

The patient reported occasional sharp pain no higher than 6/10 between treatments.

#### **Advice and Precautions**

The patient previously used ice packs to manage increased pain and heat sensations in the affected area, which provided temporary relief. However, the practitioner advised him to stop using ice, explaining that while it might offer short-term relief, rewarming could worsen the heat sensation. In addition, the patient was given dietary recommendations to help reduce inflammation. He began preparing homemade meals and transitioned to a Mediterranean diet,



known for its anti-inflammatory benefits. After implementing these changes, the patient reported improved overall pain and heat sensation.

#### Discussion

This is a case report on a 57-year-old male patient with acquired syringomyelia who received regular acupuncture treatment, addressing both his systemic constitution and local stagnation. As a result, the patient reported a five-degree reduction in pain and improved overall quality of life.

A diagnosis of syringomyelia requires MRI imaging, although the presence of spinal cavities was first reported in 1543, and the condition was clinically described by Sir William Gull in 1862 (Demetriades, 2012). Despite these historical milestones, our understanding of syringomyelia and its biomedical treatment modalities is still evolving. Furthermore, there are limited studies and research on using TCM in treating syringomyelia.

Treating the symptoms of syringomyelia can be complex and challenging due to the wide range and severity of symptoms. One limitation of this case report is that the treatment approach is difficult to replicate, as it is tailored to the patient's unique constitution and symptom presentation. Additionally, it is challenging to assess the effectiveness of the treatment without access to MRI imaging to evaluate any changes in the size of the syrinx in response to the treatment. Future research could focus on integrating MRI imaging and inflammatory biomarkers before and after treatment to provide objective evidence of TCM's impact on syrinx size and inflammation. Comparing manual to electroacupuncture techniques and different cupping methods would help determine the most effective treatment strategies. Additionally, developing a standardized acupuncture point protocol, including optimal needling depth and stimulation techniques, would improve treatment reproducibility and clinical outcomes.

Despite these limitations, the case report shows promising results, especially considering optimal surgical treatment for syringomyelia remains challenging. Complication and recovery rates can vary depending on the patient's age and the specific procedure performed. Approximately 15–30% of patients with acquired syringomyelia who undergo laminectomy surgery may experience continued deterioration of symptoms and remain dependent on pain medication (Ushewokunze et al., 2010). Moreover, 50% of the patients undergoing Foramen Magnum decompression for syringomyelia Chiari complex may require further surgical treatment due to persistent, progressive, or recurrent syringomyelia (Soleman et al., 2019).



Acupuncture has been proven to lower inflammation and remains the safest treatment modality for reducing pain compared to pain medication. A study published in Science Direct by the American Journal of Emergency Medicine reports that acupuncture is at least as efficacious and has a better safety profile than IV morphine in the management of acute pain in emergency departments (Grisso et al., 2016).

Additionally, running cupping specifically helped reduce the heat sensation in the treated area by improving tissue oxygenation, enhancing lymphatic drainage, and reducing both local and systemic inflammation. Cupping helped to effectively alleviate musculoskeletal stiffness and pain. An article published by the Pain Management Department of Madigan Army Medical Center explains that the negative pressure created by cupping induces ecchymosis, prompting an immune response that produces macrophages. This process leads to the production of heme oxygenase (HO-1), which breaks down heme and results in biliverdin (BV), bilirubin (BR), and carbon dioxide (CO2). The release of these compounds has been shown to create local and systemic antioxidant, anti-inflammatory, anti-proliferative, and neuromodulatory effects in both animal and human systems (Lowe, 2017).

Together, these modalities can have a synergistic effect, acupuncture addresses the root causes of stagnation and helps to regulate the flow of qi and blood, clear blockages, and restore balance within the body's systems. The neuromodulatory effects of cupping help to regulate the nervous system's response to pain and injury, reducing the perception of pain and improving motor function. Cupping promotes local blood circulation, releasing muscle tension and stimulating immune response.

### **Patient Perspective**

The patient reports, "Acupuncture treatments have truly been a life-changing experience, helping me return to a more normal life. It has empowered me to take control of my health again. The first acupuncturist I worked with made a significant impact, but after she left, I saw two other acupuncturists without the same results. My anxiety levels increased, and I started feeling helpless. Then I found Anita. The first time I met her, I told her that I could immediately tell if the treatment was working because I experienced a strange sensation in my body, a feeling I call being 'dinged out.' After working with Anita for a few years now, I still feel 'dinged out' almost every time I get off the treatment table. It might sound strange, but it's the best feeling I can experience."



## **Patient Consent**

The patient gave informed consent for this case report.

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