Convergent Points
AN EAST-WEST CASE REPORT JOURNAL

Rhys May



Dr. Rhys May, DAc, LAc (she/they) is an acupuncturist and Chinese herbal medicine practitioner in Seattle, WA. A graduate of Bastyr University, they are now pursuing advanced oncology acupuncture training through Memorial Sloan Kettering Cancer Center. North Seattle Community Acupuncture and Wedgwood Acupuncture & Botanical Medicine are where they currently provide care for pain, stress and anxiety, hormonal health, and complex chronic conditions. The natural world inspires and guides Dr. May's work with patients and informs their approach to helping people find balance, vitality, and wellbeing.

Acupuncture with Bleeding Techniques and Autogenic Breathing for Sickle Cell Pain Crisis: A Case Report

By Rhys May, DAc, LAc

Abstract

Pain crises in sickle cell anemia (SCA) are often managed with opioids, which can cause adverse effects and reduced function. This report describes a patient with SCA who experienced frequent vaso-occlusive pain crises requiring ongoing analgesic therapies. The patient completed a short outpatient course of acupuncture and traditional Chinese medicine (TCM) to improve circulation and relieve pain. The patient reported less pain, more daily functioning, and used fewer opioids during treatment. No adverse effects occurred. Treatment sessions were few (four), and follow-up was short. This case shows acupuncture and TCM may be feasible additional therapies for pain in SCA and supports further study of this combined approach.

Keywords:

Case report, sickle cell anemia, pain, acupuncture, traditional Chinese medicine (TCM), health disparities, bleeding techniques, autogenic breathing

Introduction

Sickle cell anemia (SCA), an inherited autosomal recessive disorder, is defined by abnormal hemoglobin that alters red blood cells from circles into crescent or sickle shapes (Serjeant, 1997). This altered morphology provides some protection against malaria but also leads to severe medical complications (Darbari, Sheehan, & Ballas, 2020). SCA affects roughly 100,000 individuals in the United States, with a disproportionate impact on African American populations, where one in 365 births is affected, compared to one in 16,300 Hispanic American births. Approximately one in 12 individuals of Black or African descent carries the sickle cell trait (Hassell, 2010). The number of

OPEN ACCESS
Citation: May, R. (2026). Acupuncture with Bleeding Techniques and Autogenic Breathing for Sickle Cell Pain Crisis: A Case Report. *Convergent Points: An East-West Case Report Journal 5*(1). www.convergentpoints.com
Editor: Kathleen Lumiere, Seattle Institute of East Asian Medicine, UNITED STATES
Received: March 19, 2025
Accepted: February 7, 2026
Published: February 15, 2026
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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.

people with the disorder is projected to increase, largely due to climate change-related expansion of malaria-prone regions (Biswas, 2013).

Although first identified in 1910, SCA continues to suffer from inadequate funding and limited public awareness, often exacerbated by systemic racism within healthcare systems (Anderson et al., 2023; Smedley et al., 2003). Structural and systemic racism influence where people live and work, their exposure to stress and environmental harms, and their access to insurance and health care facilities. All these factors contribute to persistent gaps in life expectancy, chronic disease burden, and mortality (Macias-Konstantopoulos et al., 2023).

For Black patients with sickle cell disease, studies show that pain is more likely to be underestimated and undertreated, and that both race- and disease-based discrimination in health care are linked to more severe pain, greater pain interference, and higher emergency department use (DJPH, 2022; McGill et al., 2024; Anderson et al., 2023).

One of the hallmark symptoms of SCA is the pain crisis caused by the obstruction of small blood vessels by the sickle-shaped red blood cells. Pain experienced by individuals with SCA is often described as sharp and intense, ranging from mild to exceeding that reported in childbirth or surgery (Darbari et al., 2020; Foley & Portenoy, 1994). This pain can last anywhere from hours to several days. Management typically includes rapid hydration and opioid analgesics (Arzoun et al., 2022). Individuals with chronic pain secondary to avascular necrosis of the joints, a frequent comorbidity in sickle cell disease, may experience temporary relief through nerve blocks (Darbari et al., 2020).

The frequency of sickle cell pain crises, or vaso-occlusive crises, is the most common predictor of morbidity in patients with SCD. Crises usually have a prodromal phase of one to two days. Crises tend to peak on day three and may last up to six or seven days. Hospital stays average ten days for adults. Complications can include acute chest syndrome, which affects 10 to 20 percent of patients and can result in respiratory failure or death (Darbari et al., 2020).

Chronic pain management in SCA often relies on opioids. Black patients and other marginalized groups frequently face barriers to pain care including undertreatment and bias in clinical settings (Arzoun et al., 2022; Hoffman et al., 2016; Anderson et al., 2023). In this case, acupuncture was offered as an option to complement opioid therapy to manage the sickle–cell–related pain of a patient with intersecting marginalized identities. Their experience demonstrates how integrative therapies can be part of a broader strategy for patient-centered and inclusive care.

Case Description

Patient Demographics

A 57-year-old Black, non-binary individual was diagnosed with sickle cell disease at birth and has a medical history notable for recurrent vaso-occlusive crises, frequent hospitalizations, and substantial doses of intravenous hydromorphone. They also carry a comorbid diagnosis of Graves' disease. The patient reported a history of severe SCD-related complications, including a prior vaso-occlusive event that resulted in coma. Relevant social and occupational history was not available. The patient has extensive experience navigating healthcare systems due to recurrent hospitalizations related to SCD.

Chief Complaint

The patient presented with severe rib pain, described as "pain like a hot round metal poker stabbing them in their ribs."

History of Present Illness

The patient presented during an acute episode consistent with a vaso-occlusive crisis. During intake, they were visibly distressed and tearful, describing both the severity of their current pain and the cumulative toll of recurrent pain episodes over time. They expressed a strong aversion to opioid medications, explaining that prior opioid use, while effective for analgesia, left them feeling disconnected from their sense of self. This experience reinforced their desire to avoid reliance on opiates whenever possible.

Clinical Findings

Physical Examination

Pain was localized to the mid-axial rib region. The pain's intensity was severe and described as stabbing and burning.

Tongue

The tongue was pale and quivering.

Pulse

The pulse was wiry at first palpation and became slippery over the course of treatments.

Timeline

Table 1. Chronological timeline of relevant medical history and clinical course

Date/ Time Point	Event
Birth (1967)	Diagnosed with sickle cell disease (HbSS) via hemoglobin electrophoresis
Prior history	Diagnosed with Graves' disease
Prior history	Recurrent vaso-occlusive crises requiring hospitalization and intravenous hydromorphone (Dilaudid)
Prior history	Severe vaso-occlusive episode resulting in coma
Visit 1 (Day 0)	Severe vaso-occlusive pain crisis (10/10); initial acupuncture treatment administered
Day 14	Pain crisis with maximum reported intensity of 8/10, managed at home with opioid medication
Visit 2 (Day 21)	Mild residual discomfort (3/10); second acupuncture treatment
Visit 3 (~Day 45)	Intermittent "mini flares"; third acupuncture treatment and initiation of herbal prescription
Visit 4 (Final visit)	Episodic spasmodic leg pain (4/10); final acupuncture treatment

Diagnostic Assessment

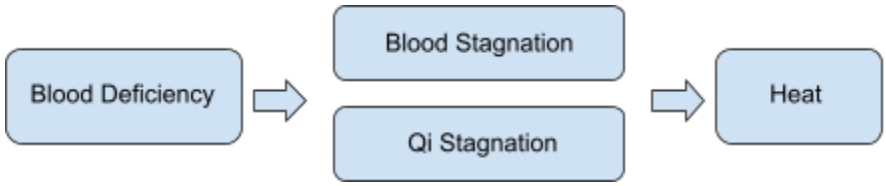
Traditional Chinese Medicine (TCM) Diagnosis

The patient presented with acute, localized pain and a sensation of heat, suggesting a TCM diagnosis of blood stasis with heat. The pain was sharp, intensified with pressure, and matched the TCM pattern of blood stasis obstructing qi flow, which gives rise to inflammation and pain.

The pain was located in the patient's mid-axial rib area, following the trajectory of the TCM Foot Taiyin (Spleen) Channel and the Foot Jueyin (Liver) Channel. Blood deficiency can lead to qi and blood stagnation, which may in turn lead to

heat. “When qi moves, blood follows. If the qi is deficient or stagnant, it cannot push the blood, and this also stagnates. Long-term blood deficiency can induce stasis of blood by impairing the qi-moving function” (Maciocia, 2015, pp. 52, 152).

Figure 1: Pathomechanism



Diagnostic Challenges

The patient’s severe pain significantly limited communication, complicating the process of gathering a thorough medical history and understanding the full extent of their condition. When people experience intense pain, their ability to focus, prioritize, and articulate symptoms accurately is often impaired. Pain can also induce anxiety, worsened discomfort, agitation or distress. The patient was experiencing all of these conditions.

Furthermore, the patient reported facing obstacles as a Black, queer, non-binary individual, describing how in prior healthcare encounters, clinicians sometimes dismissed or refused the patient’s correct pronouns and showed overt bias. These experiences undermined trust.

TCM Treatment Strategy

The treatment strategy was to calm the shen, clear heat, and move blood to relieve stasis and pain. Treatment had to occur in an order that reduced pain before touching high-pain areas. Calming and soothing came first to help the patient relax.

Therapeutic Interventions

Treatment was administered across four acupuncture sessions conducted between January and February 2024, with each session lasting approximately 60 minutes. From a TCM perspective, the treatment goal was to reduce acute pain and decrease the frequency of pain crises through strategies focused on moving blood and clearing heat, with the intention of improving quality of life and supporting longer-term symptom management. This approach was selected in response to the patient’s history of recurrent vaso-occlusive crises, their expressed aversion to opioid medications, and their desire for alternative strategies to manage pain.

Each session incorporated acupuncture aimed at calming the shen, addressing systemic heat, and promoting blood circulation in localized areas and along channels exhibiting signs of stagnation. Treatment was modified at each visit according to the patient's presentation. Stainless steel filiform needles were used for body and auricular acupuncture points, including UB17 (Geshu) and SP10 (Xuehai), with an average needle retention time of approximately 20 minutes. Bleeding techniques were performed using sterile lancets and involved puncture only, without retention, particularly at Jing-Well points and areas of localized pain. During the third session, an individualized Chinese herbal medicine formula was prescribed.

Treatment 1

During the first treatment session, two clinicians worked in tandem while the patient rested on their right side. One clinician began by applying auricular Shenmen, followed by bilateral acupressure at KI (Yongquan). Concurrently, the second clinician guided the patient through a series of autogenic breathing exercises. The clinician instructed the patient to establish eye contact and focus attention on their breath. The patient was encouraged to inhale deeply through the nose, allowing diaphragmatic expansion, and to exhale slowly through the mouth to release tension. To promote a calming rhythm, the clinician reinforced a slow, steady breathing pace with soothing, repetitive phrases, each spoken slowly and repeated 6 times.

"My arms are heavy and warm… I am at peace."

"My legs are heavy and warm… I am at peace."

"My heartbeat is calm and strong… I am at peace."

"My forehead is pleasantly cool… I am at peace."

"My abdomen radiates warmth… I am at peace."

"My breathing is calm and relaxed… I am at peace."

These practices facilitated deep relaxation, after which additional auricular needles were placed at the Spine, Heart, and Liver points. A notable reduction in pain was observed, allowing the patient to tolerate further treatment.

Following relaxation and needling, bleeding techniques were employed to address heat and blood stasis. Wearing gloves, the clinician positioned the affected tissue between the index finger and thumb and used a lancet to create swift punctures, followed by gentle manual expression to promote blood release. Bleeding was performed at auricular Erjian, SP1 (Yinbai), LR1 (Dadun), two painful areas along the ribs, and Du 14 (Dazhui). Each site was punctured five times or more, with several drops of bright red blood released from each puncture.

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Table 2: Treatment 1, Acupuncture

Treatment principle	Acupoint (needled, bilateral unless otherwise stated)
Calm shen, relieve pain	Auricular Shenmen, Spine, Heart, Liver, Erjian (L)
Calm shen	KI1 (Yongquan) acupressure
Clear heat, regulate blood calm shen	SP1 (Yinbai) bleeding
Clear heat	LR1 (Dadun) bleeding, Du 14 (Dazhui)
Relieve local heat and stasis	Rib areas 1 and 2 bleeding

Treatment 2

During the second treatment session, the patient reported reduced pain, allowing acupuncture to be initiated immediately following the interview portion of the visit. Systemic acupuncture points were selected to clear heat, calm the shen, and promote blood circulation. Additional needles were placed at newly identified areas of localized pain along the Spleen channel of the left leg. Bleeding cupping therapy was also employed at selected body points, including Du 14, SP21, SP10, and the rib areas. This technique involved gently puncturing the skin with a lancet before applying cups to generate negative pressure and facilitate mild bleeding.

Table 3: Treatment 2, Acupuncture

Treatment principle	Acupoint (needled, bilateral unless otherwise stated)
Calm shen	Auricular Shenmen, Heart
Clear heat	Yintang, Du 20, auricular ErJian, Du 14, local pain areas along ribs x 2
Move blood	SP21 (Dabao), SP10 (Xuehai) bleeding, auricular Spine

Treatment 3

At the third treatment session, the therapeutic strategy continued to focus on clearing systemic heat cooling and moving blood to relieve pain; and soothing

Liver qi. Acupuncture was administered as outlined in the treatment table, and the patient was prescribed a personalized Chinese herbal medicine formula in granule form. The base formula was Si Wu Tang, modified to incorporate elements of Qing Ying Tang and Tao Hong Si Wu Tang.

Table 4: Treatment 3, Acupuncture

Treatment principle	Acupoint (needled, bilateral unless otherwise stated)
Calm shen	Auricular L Shenmen; L Heart; Yintang; L HT7 (Shenmen)
Clear heat	LR2 (Xingjian)
Move blood	UB17 (Geshu), UB49 (Yishe), R SP10 (Xuehai)

Table 5: Chinese herbal medicine prescribed at Treatment 3

Type: Granules
Base Formula: Si Wu Tang
Modifications: (creating Qing Ying Tang + Tao Hong Si Wu Tang) tao ren 5 hong hua 5 xuan shen 5 sheng di huang 5 mai men dong 5 jin yin hua 5 lian qiao 5 dan zhu ye 5 zhi zi 5 dan shen 5 bai shao 5 chai hu 5 yu jin 5
Dose: 100g
Take 5g, 2x a day.

Treatment 4

At the fourth and final session, similar treatment principles were maintained. Due to a reduction in pain severity, auricular points were omitted. Filiform needling was followed by bleeding techniques at SP10 bilaterally and Du 14.

Table 6: Treatment 4, Acupuncture

Treatment principle	Acupoint (needled, bilateral unless otherwise stated)
Calm shen	Auricular L shenmen; L heart; yintang; L HT7
Clear heat	LR2 (Xingjian)
Move blood	UB17 (Geshu), UB49 (Yishe), UB40 (Weizhong), SP10 (Xuehai) bleeding, Du 14 (Dazhui) bleeding

Follow-up and Outcomes

Tolerability Assessment

The patient tolerated all treatments well. No difficulty with the interventions was reported during or after any treatment sessions. The patient did not report discomfort related to the procedures and completed each visit as planned.

Adverse Events

No adverse events were reported throughout the course of care. This includes the absence of treatment-related complications, unexpected symptoms, or worsening of baseline pain attributable to the intervention.

Outcomes

Pain Intensity and Clinical Course

During the initial visit, the patient reported experiencing severe pain rated at 10 out of 10. Following treatment, pain decreased to 0 out of 10. The patient also reported sleeping restfully without discomfort.

Two weeks following the initial treatment, the patient experienced a pain crisis that was less severe than prior typical crises, with a maximum pain level of 8 out of 10. This episode was managed at home with opioid analgesics.

At the third week intake, the patient reported mild discomfort that was perceived as potentially progressing toward a pain crisis. Pain was rated 3 out of 10 and resolved completely to 0 out of 10 following treatment. By this time, approximately 1.5 months after the initial visit, the patient described brief

mini-flares of pain characterized as transient episodes, significantly less severe than full pain crises. The patient reported using oxycodone only three times since the initial visit and noted a general reduction in body heat sensation.

At the fourth and final visit, the patient reported complete pain relief lasting one week prior to the return of mini-flares. On the day of the visit, pain was described as spasmodic and localized to the legs, rated 4 out of 10. Following treatment, the pain again resolved completely to 0 out of 10.

Table 7: Pain Ratings by Visit

Visit	Time Point	Pain at intake	Pain at discharge
1	Initial visit	10 out of 10	0 out of 10
2	Approximately 3 weeks	3 out of 10	0 out of 10
3	Approximately 1.5 months	3 out of 10	0 out of 10
4	Final visit	4 out of 10	0 out of 10

Functional Status and Quality of Life

Following initiation of treatment, the patient reported improvement in functional status, including the ability to sleep restfully without pain. The frequency and severity of pain crises decreased over the course of care, with subsequent episodes described as less intense and shorter in duration compared to baseline. The patient also reported reduced reliance on opioid medication. These findings indicate a positive impact on overall quality of life.

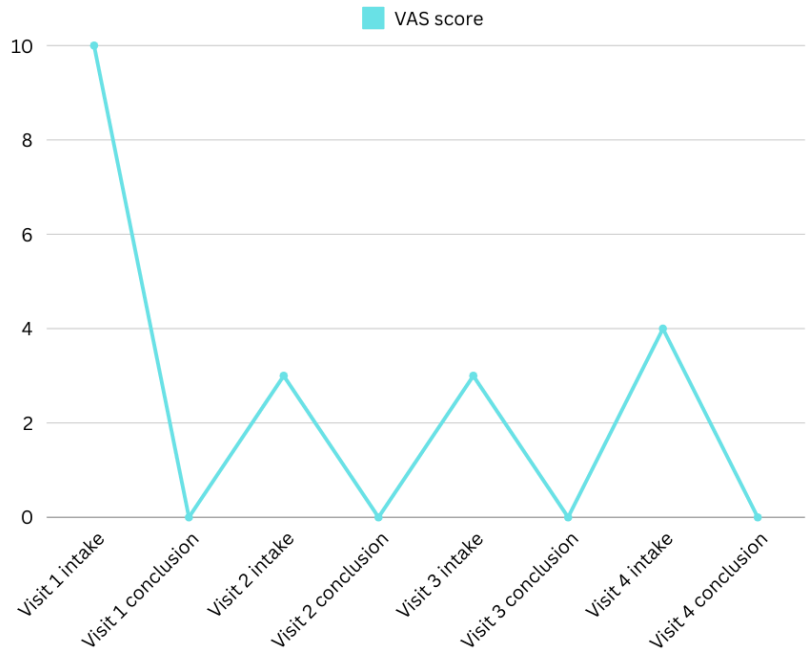
Follow-Up Diagnostic Testing

No follow-up diagnostic tests were performed during the course of care.

Discontinuation of Care and Last Patient Contact

The patient last presented for care at the fourth visit, approximately 1.5 months after the initial presentation. The patient discontinued care voluntarily after achieving satisfactory symptom control and has not sought further treatment at this time.

Figure 2: Pain at intake and conclusion of visits 1-4.



Discussion

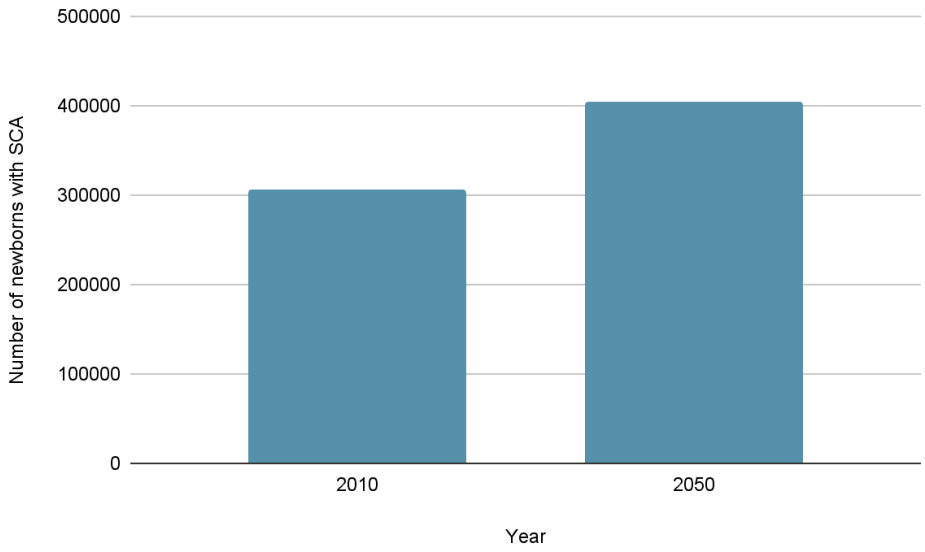
This case report examined the use of acupuncture as an adjunctive intervention for pain management during a vaso-occlusive crisis in a patient with sickle cell anemia. Pain crises in SCA are typically managed with high-dose opioid analgesics, which are associated with several limitations, including adverse effects on quality of life, reduced functional capacity, and the development of tolerance that may necessitate escalating doses over time (Arzoun et al., 2022).

Acupuncture is a well-established therapeutic modality with proposed multifaceted mechanisms for pain modulation, including neuromodulatory and circulatory effects (Niruthisard, Ma, and Napadow, 2024). Prior studies have demonstrated that acupuncture can enhance local blood perfusion (Zhang et al., 2013), a mechanism that may be particularly relevant in sickle cell disease, where impaired microcirculation contributes to pain. In this case, acupuncture was incorporated into a multimodal pain management approach

and was associated with reported improvements in pain experience and functional capacity during the treatment period.

The global burden of sickle cell disease is expected to increase substantially, with projections estimating a 32% rise in affected births between 2010 and 2050 as climate change expands regions vulnerable to malaria (Piel, Hay, Gupta, Weatherall, & Williams, 2013). This anticipated increase underscores the need for effective and cost-conscious approaches to managing sickle cell–related pain. In the United States, approximately 50% of individuals with sickle cell disease are projected to be enrolled in Medicaid by 2024 (Centers for Medicare & Medicaid Services [CMS], n.d.), highlighting the economic pressures associated with current treatment paradigms and the importance of exploring affordable adjunctive therapies.

Figure 3: Projected growth of newborns affected by SCA from 2010 to 2050



This case also highlights the healthcare experiences of a patient with intersecting marginalized identities as a Black, queer, and non-binary individual (Casey et al., 2019).

Medical racism has been shown to undermine communication and trust for Black patients, contributing to dismissed symptoms and delayed treatment (Hoffman et al., 2016; Simon et al., 2021). Similarly, misgendering and a lack of gender-inclusive practices can create alienation and anxiety for non-binary patients, discouraging engagement with healthcare systems and negatively affecting outcomes (Smedley et al., 2003). Acupuncture, which is often

delivered in outpatient and non-hospital settings, may offer a care environment that facilitates patient-centered communication and trust.

In this case, clinicians emphasized active listening and respectful communication during the initial consultation, fostering rapport and creating an environment in which the patient felt comfortable engaging in care despite severe pain. This therapeutic relationship appeared central to the patient's ability to participate in treatment and communicate their needs.

The strengths of this report include the detailed description of an integrative approach to pain management in a patient with complex medical and social considerations. Limitations include few treatment sessions and the absence of long-term follow-up. Additionally, the need to establish trust and rapport within a limited timeframe while the patient was experiencing significant pain presents challenges for reproducibility, particularly given the underrepresentation of marginalized groups within healthcare professions and the recent sharp decline in institutional diversity, equity, and inclusion initiatives in the United States.

Although inherently limited by its single-case design, this report supports further exploration of acupuncture and related integrative therapies as adjunctive approaches to pain management in sickle cell anemia. As the global burden of SCA grows and the costs of opioid-centered care continue to rise, therapies both cost-conscious and responsive to patient experience warrant greater attention. In this case, acupuncture offered not only a means of addressing pain but also a care context that emphasized respect, communication, and trust, factors that may be especially meaningful for patients who have experienced marginalization within healthcare systems.

Patient Perspective

Following the initial acupuncture treatment, the patient reported a marked improvement in pain control. Upon leaving the appointment, the patient stated that they had never previously experienced pain relief of this magnitude, including during prior treatment with opioid medications. The patient further expressed surprise and cautious optimism regarding the outcome, asking:

"What happens if I come in next week and I'm not having a pain crisis?"

This statement reflects the patient's perception of the immediate effectiveness of acupuncture, as well as a shift in expectations regarding the chronicity and severity of their pain—a meaningful positive impact that endured through subsequent sessions.

Informed Consent

The patient provided written informed consent for the publication of this case report, and a copy is on file with the authors.

Statement of Safety

All treatments described in this case report were administered in accordance with Clean Needle Technique and established safety protocols. Standard contraindications for acupuncture and bleeding techniques were observed. No adverse events occurred during the course of treatment.

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