

Integrative East–West Medicine Intervention for Chronic Daily Headache: A Case Report and Care Perspective

Global Advances in Health and Medicine

Volume 9: 1–8

© The Author(s) 2020

Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/2164956120905817

journals.sagepub.com/home/gam



Justin G Laube, MD^{1,2} , Thais Salles Araujo, MD¹, and Lawrence B Taw, MD, FACP^{1,2}

Abstract

Chronic daily headache is a group of headache syndromes including most commonly chronic migraine and chronic tension-type headache, which often overlap, are complicated by medication overuse and are disabling, costly, and variable responsive to western pharmacotherapeutic interventions. There is growing research and awareness of integrative health approaches and therapies to address patients with chronic headache, yet limited examples of how to deliver this approach. This article reviews a commonly seen challenging case of a patient with overlapping chronic migraine and chronic tension-type headache complicated by medication overuse managed with an integrative east–west medicine intervention. This included person-centered biopsychosocial history taking, traditional Chinese medicine informed acupuncture, trigger point injections, and contributing factors modifications. A narrative review of the literature is presented to demonstrate an evidence-informed rationale for incorporating nonpharmacologic approaches to effectively help reduce the symptom burden of this patient population.

Keywords

chronic daily headache, integrative medicine, migraine, acupuncture, trigger point

Received October 29, 2019. Accepted for publication January 20, 2020

Introduction

Chronic daily headache (CDH) is a group of headache syndromes characterized by headache symptoms ≥ 15 days per month over at least 3 months.¹ The prevalence of CDH is estimated to be $\sim 4\%$ of the US adult population.² The 2 most common subtypes are chronic migraine (CM) and chronic tension-type headache (CTTH), estimated to be $\sim 58\%$ and 40% of CDH patients, respectively.³ CDH contributes significantly to patients' overall disability, impaired quality of life, and higher health-care resource utilization compared to less frequent headache syndromes.⁴ CM is particularly insidious; the WHO ranked CM among the top 5 conditions contributing to disability worldwide.⁵ Determining treatment plans for CDH patients is complicated due to the considerable overlap between CM and CTTH in regards to symptoms and their medication overuse patterns. In patient surveys, 58% of migraine patients reported tension-type symptoms and 68% of tension-headache

patients reported migraine-type symptoms.⁶ CDH patients also commonly overuse acute headache medications. At least two-thirds of CDH patients report that they have used abortive medications ≥ 14 days per month and meet criteria for a dual diagnosis of medication overuse headache (MOH).^{7,8} Despite a variety of oral pharmacologic therapies used for the prophylaxis of CDH, many patients continue to suffer with unacceptable symptom burden and disability.^{1,9}

¹UCLA Center for East-West Medicine, Department of Medicine, David Geffen School of Medicine at UCLA, Los Angeles, California

²Division of General Internal Medicine and Health Service Research, Department of Medicine, University of California, Los Angeles, Los Angeles, California

Corresponding Author:

Justin G Laube, University of California, Los Angeles, 2336 Santa Monica Boulevard, Suite 301, Los Angeles, CA 90404, USA.

Email: jlaube@mednet.ucla.edu



There is an inherent tension between the dominant conventional biomedical model that emphasizes a specific reductionist diagnosis and pharmacologic therapies and patients with chronic headaches that do not fall neatly into this paradigm. Many patients with CDH are dissatisfied with a purely pharmacotherapy-based approach and seek complementary and alternative medicine (CAM) therapies to combine with their care. One large online survey of chronic migraineurs found that only 30% were satisfied or very satisfied with their medical treatment for their migraines, and 75% reported that they incorporated nonpharmacological therapies “most of the time” or “always” into their migraine care.¹⁰ The rates of CAM use by headache sufferers are reported to be as high as 50% in primary care and ~80% in tertiary care headache clinics and suggest the desire for more holistic treatment options.¹¹ We present a patient case with refractory CDHs, specifically, intermittent migraines without aura, daily tension-type headaches, and medication overuse. The patient’s symptoms were successfully managed through a person-centered, integrative east–west medicine approach which incorporates an integrative medical health history and assessment both from traditional Chinese medicine (TCM) and western biomedical model. The individualized treatment methods included acupuncture, trigger point injections (TPIs), lifestyle modifications, and self-care prescriptions to modify risk factors for perpetuating headache symptoms.¹² This case demonstrates the potential value of a multimodality, integrative medicine, CAM, and patient empowering approach to help complex CDH patients.

Case Presentation

Presenting Concerns

A 61-year-old male business executive with a medical history of anxiety and obstructive sleep apnea (OSA) presented to our integrative medicine consultative clinic with a chief complaint of CDHs. He recalls having headaches since childhood, and both his mother and sister had CMs. He described his headaches as a “tension” sensation radiating from his shoulders and base of the skull to his eyes bilaterally that was worse in the afternoon and upon awakening. His symptoms improved with massage therapy and avoidance of work-related stress. A minimum of 3 times per week, his headaches worsened and were accompanied by migrainous symptoms of unilateral blurry vision, nausea, vomiting, photophobia, and scalp/shoulder touch sensitivity that would last for 3 to 12 hours. His migraines were precipitated by alcohol intake and changes in the temperature. He denied any persistent visual changes, hearing loss, numbness, or weakness.

He was previously evaluated by a neurologist and a brain magnetic resonance imaging was unremarkable. He tried daily propranolol and amitriptyline for 3 months each, but did not notice a change in his symptom burden and was intolerant of the central nervous system side effects. He had been managed primarily by his primary care physician (PCP) for >10 years through prescriptions of oxycodone-acetaminophen and sumatriptan (average 12 and 9 tablets each month, respectively) which he used together to treat each migraine headache. He also used an acetaminophen–aspirin–caffeine (Excedrin) combination pill to address his tension-type headache symptoms an average of 12 tablets per month.

Clinical Findings and Integrative Diagnosis

A biopsychosocial history was obtained, and he reported frequent and chronic stress from his work and often felt pervasive anxious thoughts. He slept poorly and sparingly used his continuous positive airway pressure (CPAP) because of mask fitting issues. He had significant daytime sleepiness and attempted to manage this through prescription stimulants (modafinil, prescribed by his PCP) and consumed 4 to 5 cups of coffee per day. He spent the majority of his day at his desk and typing on his computer. He felt easily irritable and had a propensity to have outbursts of anger. He ate large amounts of red meat with limited fruit and vegetable intake. He had the habit of eating in a hurry at his work desk or during lunch meetings.

On examination, he was obese, with a body mass index of 30 kg/m². He exhibited a head forward posture, limited neck range of motion, and exquisite sensitivity to the upper trapezius muscles and base of occiput with palpation, which radiated to his temples and orbit. His neurologic examination was unremarkable. According to TCM examination, his tongue was slightly red around the edges, without coating and the pulse bilaterally wiry.

His east–west integrative assessment and diagnosis includes CDH that is an overlap of CM and CTTH with MOH, and TCM pattern diagnosis of liver yang rising with liver yin deficiency. Contributing factors likely include cervical predominant myofascial pain, unmanaged OSA, chronic over work, and psychological stress (Table 1).

Therapeutic Focus and Assessment

A treatment plan was created with a goal to reduce his headache symptom burden and overall disability (Table 1). He was seen every 2 weeks for a total of 5 visits. Each visit included an acupuncture treatment session that lasted for 25 minutes of needle time. This was preceded by at least 15 minutes of a medical visit to review his progress and care plan, and TPIs with 25-gauge × 1/2 in. needle with 0.2 mL

Table 1. Therapeutic Plan.

Diagnosis and Factors	Treatments and Medical Care	Self-Care/Lifestyle Homework
<ul style="list-style-type: none"> • Chronic daily headache • Chronic migraine • Chronic tension-type headache • Medication overuse headache • TCM diagnosis—liver yang rising with liver yin deficiency 	<ul style="list-style-type: none"> • Acupuncture • Trigger point injections • Referral for sleep specialist for CPAP mask re-fitting • Recommendation to reduce opiate and Excedrin use 	<ul style="list-style-type: none"> • Neck stretching routine • Self—acupressure/massage • Transcutaneous electrical nerve stimulator • Mindfulness guided MP3s • Diet modification with increased fruits and vegetables intake and reduction of red meat and coffee
Contributing factors:		
<ul style="list-style-type: none"> • Chronic stress • Sedentary lifestyle • Obesity • OSA unmanaged • Low intake of fruits and vegetables • Stimulant overuse 		

Abbreviations: CPAP, continuous positive airway pressure; OSA, obstructive sleep apnea; TCM, traditional Chinese medicine.

of 1% lidocaine to each active trigger point noted on the initial examination. This was performed with the patient in a seated position and into his bilateral trapezius, rhomboid, and suboccipital musculature (total of 6 injections per session—Figure 1). Both procedures were performed by a licensed integrative medicine physician trained in internal medicine and certified to provide acupuncture through a physician fellowship (>200 h of acupuncture clinical training). Acupuncture points for each session included Yintang, Du-20, and bilateral placement at Lv-3, LI-4, LI-10, ST-36, GB-34, SP-6, KI-3, and SJ-3. Acupuncture was performed using 34-gauge needle, without attention to the De Qi sensation to a depth of 0.2 to 1 cm, retained without further manual or electrical stimulation (Figure 1). Point selection was based on TCM pattern diagnosis and common points utilized for headache from the medical literature and our clinical experience.¹³

Self-care plan. The patient was given a homework prescription of alternating between applying self-acupressure and an over-the-counter transcutaneous electrical nerve stimulator (TENS) to acupoints LI-4, SJ-3, GB-20, and GB-21 (Figure 2) for 15 to 20 minutes twice daily to help address head and neck pain (Table 1). He was advised to follow a generic neck and shoulder stretch routine handout for 10 to 15 minutes twice daily (build from the website hep2go.com). Given his anxiety and high subjective stress, we utilized a motivational interviewing approach to explore potential mind–body interventions to improve his stress mastery, and he decided on a goal to regularly walk outdoors while listening to the free guided mindfulness mp3 file from our affiliated UCLA Mindful Awareness Research Center (see <https://www.uclahealth.org/marc/mindful-meditations>). He was advised to reduce alcohol and caffeine use, increase his intake of vegetables with a goal of

weight loss, to take frequent stretch breaks from his computer at work, and eat lunch mindfully. A referral was placed to follow-up with his sleep team to discuss his CPAP mask fitting issues.

Follow-up and Outcomes

Short term. Over the following 2 weeks after his initial visit and treatment, he had no migraine headaches and did not require any medications for headache (Table 2). He had a stable reduction of his tension-type headache frequency and severity at each subsequent visit. By his third visit, his tension-type headache frequency had reduced to twice per week and migraine headache occurred once every 2 weeks. He reported the overall headache severity was characterized as “mild.” After the initial follow-up, he reported using oxycodone a maximum of 1/2 tablet per week and was not using any other abortive medications. He reported feeling an overall improvement in his quality of life and feeling of more control of his headache symptoms. During his treatment, he reported being adherent to the dietary recommendations, acupressure/self-massage, TENS unit use, stretching, and beach walking meditation activities more than 5 days per week.

No adverse effects were noted during or after his needle-based treatments or self-care homework.

Long term. At 3 months after his last treatment visit, he continued to have a more manageable headache symptom burden with mild tension-type headaches 2 days per week (Table 2). These headaches would progress to a migraine headache a maximum of once every 2 weeks. He continued to walk outside regularly and meditate daily. He had seen his pulmonologist and was treated for allergic rhinitis to improve his CPAP tolerance and was using the machine nightly. Patient reported being

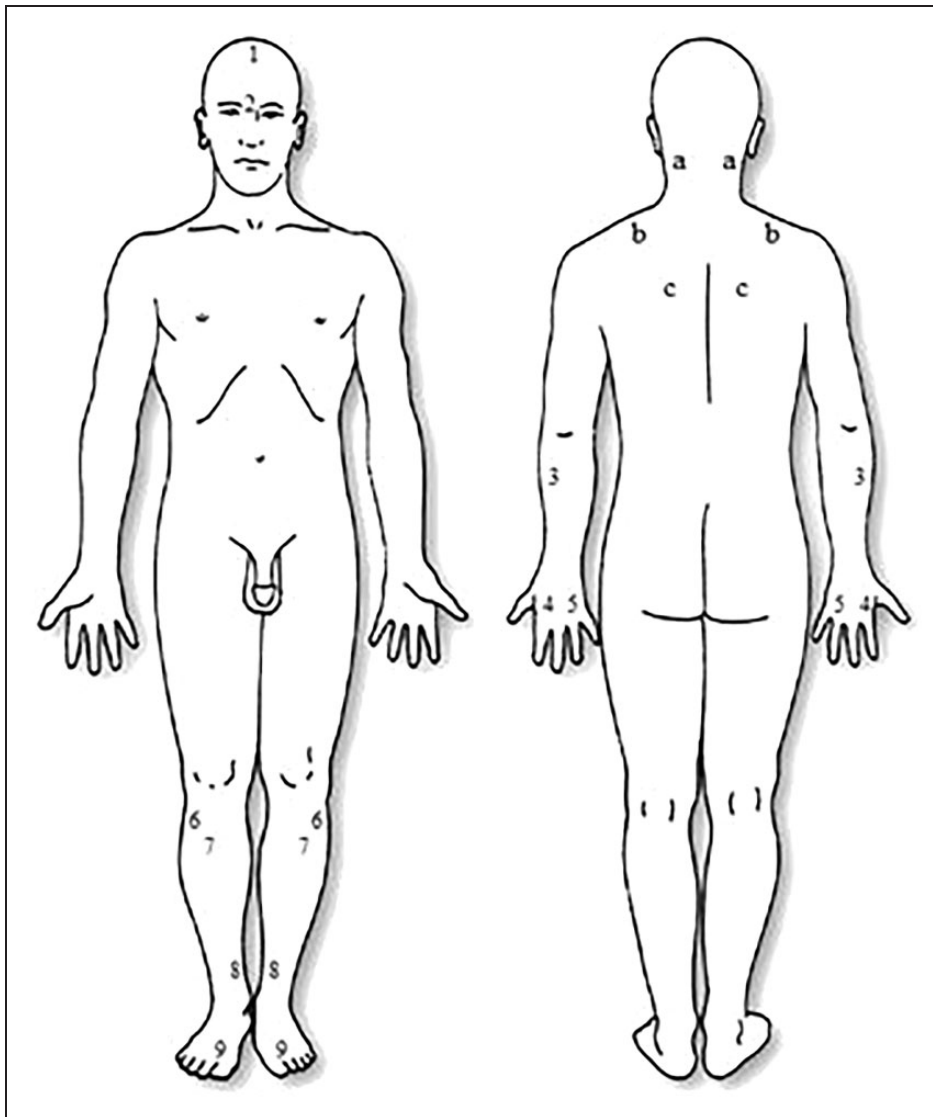


Figure 1. Acupoint and TPI Locations. TPI locations: a, sub-occipital; b, trapezius; c, rhomboid. Acupoint locations: 1, Du-20; 2, Yintang; 3, LI-10; 4, LI-4; 5, SJ-3; 6, GB-34; 7, ST-36; 8, SP-6; 9, LV-3.

able to function in a higher level at work with a relatively small amount of analgesics along with stretching, TENS use, and walking meditation.

Case Discussion and Care Perspective

This case study shows the potential benefits of using a person-centered, integrative east–west medicine approach to reduce the symptom burden, and debility for patients with CDH. The patient presented with a lifelong burden of daily intractable headaches. He met the International Classification of Headache Disorders (ICHD) criteria for the diagnosis of CM without aura and MOH, yet as is commonly found, the diagnosis did not tell the full story.¹⁴ He also had multiple modifiable perpetuating

behavioral risk factors and active myofascial trigger points.

From our clinical experience, these are commonly missed or overlooked features on history and physical examinations by neurologists and PCPs. Recognition of these risk factors could be used to create customized treatment plans to help patients modify behavioral factors that may be contributing to their headache syndrome chronicity and perpetuation. This patient was found to have unmanaged OSA with severe daytime sleepiness and morning headaches. Unfortunately, this was primarily addressed at a symptom level with prescription stimulants and patient administered high doses of caffeine. Patients with CDH are more likely to be habitual snorers and have more morning headaches compared to episodic headache sufferers.¹⁵ High

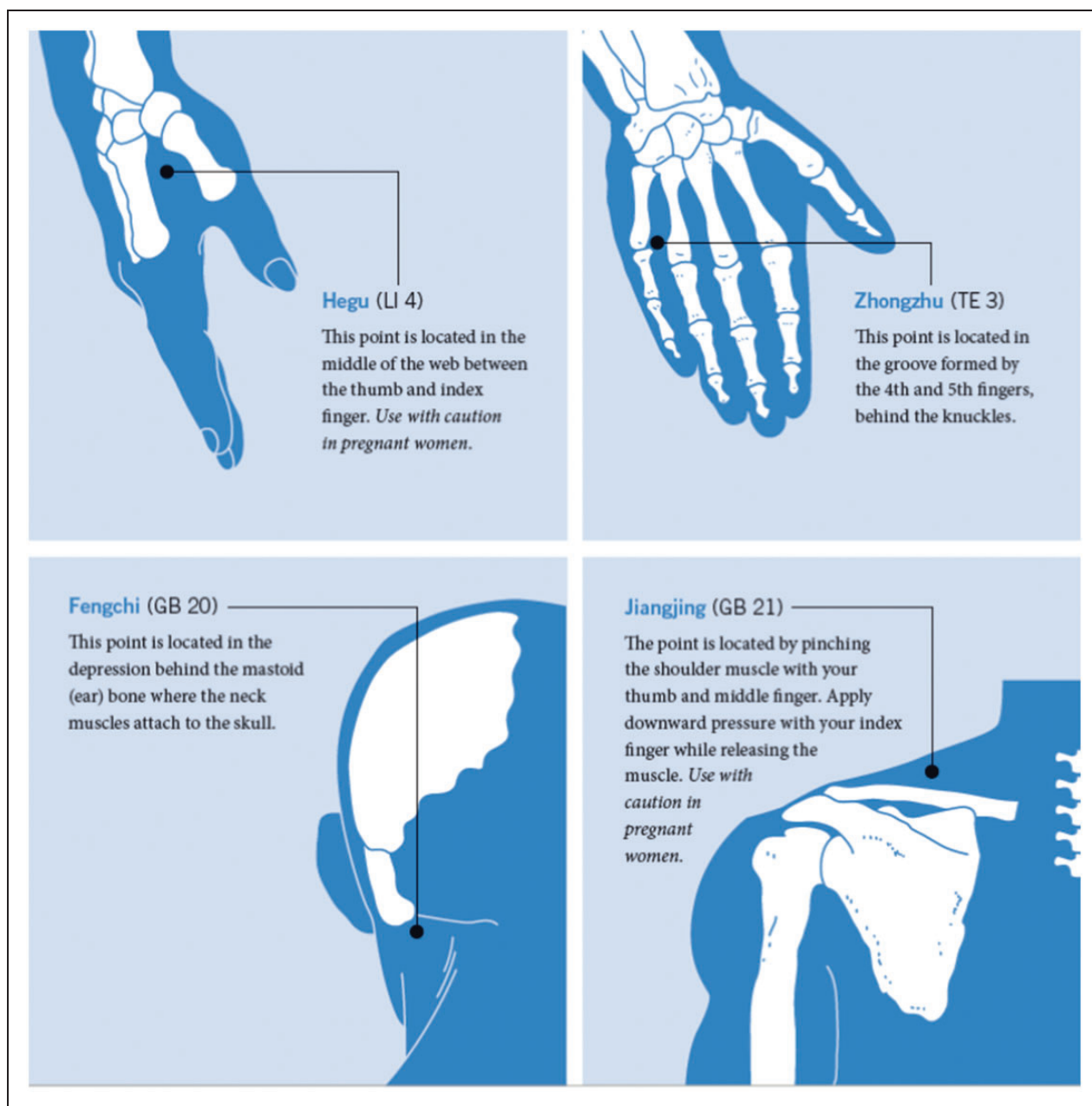


Figure 2. Acupressure Self-Care Handout.

caffeine use is also associated with an increased risk of developing CDH compared to episodic headache controls.¹⁶ The patient is also obese, which is a modifiable risk factor for progression of migraine, and is also associated with an increased frequency and intensity of migraine symptoms.¹⁷ A review from 2008 emphasized the link between obesity and CDH and encouraged weight loss intervention for overweight patients with chronic headaches including behavioral nutritional education, dietary intervention, and exercise counseling.¹⁸

From a TCM viewpoint, the patient fits into the pattern diagnosis of liver yang rising which is an imbalance

of liver yin (deficient) and liver yang (in excess) leading to a relative rise of liver yang. Simplified, this would be a relative excess of heat in the body. It is the most common pattern diagnosis for chronic headaches^{13,19} and according to TCM theory has a root cause in emotional distress over long periods of time, specially anger, frustration, and resentment.²⁰ Eating meals while working and in a hurry can also contribute as causing this pattern, as well as poor sleep, and stimulant medications. The principle of TCM treatment is to nourish yin and quieten liver yang. In this case, the stress management tools and eating habits modification in a TCM

Table 2. Summary of the Patient's Treatment Course and Improvements Noted Over Time.

	Initial Consult	2 Weeks	4 Weeks	6 Weeks	8 Weeks	5 Months
Acupuncture	X	X	X	X	X	NA
TPI	X	X	X	X	X	NA
Assessment of self-care/lifestyle changes	X	X	X	X	X	X
Oxycodone use	3×/week	0	1/2 tablet every other week	1/2 tablet every other week	1/2 tablet every other week	1/2 tablet every other week
Sumatriptan use	2×/week	0	0	0	0	0
Acetaminophen–aspirin–caffeine use	3×/week	0	0	0	0	0
Migraine HA episodes	3×/week	0	1× every other week	1× every other week	1× every other week	1× every other week
Tension HA episodes	Daily	2×/week	2×/week	2×/week	2×/week	2×/week

Abbreviations: HA, headache; TPI, trigger point injection.

perspective were treating the root cause of his liver yang rising, together with the acupuncture treatments.

Our patient struggled with significant psychological stress, anger, and poor coping which were triggers for his headache symptoms. He implemented a regular meditation program that he felt was supportive of his treatments in clinic. Mind–body approaches for CM and CTTH have been increasingly studied and supported, specifically cognitive behavioral therapy, stress management training, and biofeedback.^{21,22} The efficacy of these approaches may be because many CDH patients also suffer from psychiatric comorbid diagnoses including anxiety, depression, and posttraumatic stress disorder, and mind–body interventions commonly focus on reducing the effects of stress and reduce central nervous system reactivity.²³

Many of our patients with chronic stress and headaches are found to have a head forward posture and exhibit multiple palpable myofascial trigger points. We utilized TPIs with this patient because they are a safe and effective adjunctive treatment for tension-type and migraine headache to address the myofascial pain syndrome content.²⁴ Active myofascial trigger points and cutaneous nociceptive units contribute to the symptom burden of both CM and CTTH. Two contributing factors are forward head posture and reduced neck mobility, which put excessive strain on the neck musculature and are strongly associated with CM and CTTH.^{25,26} Multiple studies have demonstrated a benefit with treatment of trigger points using lidocaine and other similar anesthetizing injections to the active myofascial trigger points for both CM and CTTH patients.^{27–29}

For our patient, we combined TPIs along with acupuncture at each visit. Acupuncture is the most evidence supported CAM therapy for chronic headache. A Cochrane meta-analysis in 2009 investigating the use of acupuncture for migraine prophylaxis concluded

acupuncture “is at least as effective as, or possibly more effective, than prophylactic drug treatment, and has fewer adverse effects.”³⁰ In the same issue, a companion review concluded acupuncture could be a valuable option to treat frequent episodic or chronic TTH.³¹ Acupuncture is one cost-effective, low-risk intervention that shows many potential benefits to CDH patients and is underutilized by many allopathic practitioners and patients.^{10,32}

Aside from passively received needle treatments, there is evidence for noninvasive therapies to address dysfunctional posture and myofascial contributions to headache and can be performed independently by patients. A 2017 review from Neurology encouraged utilizing a multidisciplinary team approach to manage CDH including occupational and physical therapists teaching patients self-management tools such as focusing on postural awareness, stretching, supportive exercises, and body mechanics.³³ In addition, a Cochrane review found some evidence of benefit from randomized controlled trials investigating the use of TENS for CM, and a combination of TENS, self-massage, and stretching for CTTH. Although the evidence was “weak,” there was little risk of serious adverse effects.³⁴ Our clinical experience with CDH patients is they are often receptive to receiving self-care homework.

Prior to our first visit, the patient's care included a purely pharmacologic approach that included primarily abortive medications. This likely contributed to our patient developing CDH. An estimated 3% to 14% of episodic migraine patients that frequently use acute headache medication will transform to CM.¹ The risk is highest with regular use of opioid (odds ratio [OR], 1.4) and butalbital combination (OR, 1.73) medications compared to triptans (OR, 1.07), and nonsteroidal anti-inflammatory drugs (OR, 0.97).⁹ Opiate class medications have previously been overly prescribed for

recurrent headache, and newer recommendations from the Centers for Disease Control, the neurology community and the American Board of Internal Medicine strongly argue that for most patients, the risks of opiates outweigh the benefits for treating acute and chronic headache syndromes.^{35,36} Botox or the newest pharmacological approach for chronic headaches could have also been considered in this patient. Erenumab is the first drug of this new class called calcitonin gene-related peptide inhibitors approved by the U.S. Food and Drug Administration as a preventive treatment option for patients with episodic or CM.³⁷ The limiting aspects are the high cost, need for chronic use, and the unknown long-term effects, since it has only been tested in short trials of 12 to 24 weeks.³⁸

It is unclear as to which part or parts of the intervention account for his rapid improvement. This could include, for example, effects from the physical treatments, placebo, nonspecific therapeutic effects (therapeutic setting, provider–patient relationship), homework activities, and lifestyle modifications. In our clinical opinion, this is a tolerable limitation in order to create effective personalized therapies for an often-incurable complex chronic medical syndrome.

Final Thoughts

It takes patience, inquisitiveness, and sufficient clinical visit time to conduct a thorough history that includes both medical investigation and exploration into the multiple potential contributing factors to CDH patients' debility.

Given the complex medical, personal, and lifestyle issues at play in many CDH patients who have suffered long-term limiting symptoms, we advocate for exploring more integrative approaches. This favors CAM and non-pharmacologic options to be used concurrently with the lowest risk, low cost, and most evidence supported mainstream pharmacologic treatments and therapies.³⁹ Eastern philosophies, specifically TCM, are holistically oriented and have similar goals to support a patient's inherent healing capacities.¹³ In addition to the proven needle effects, repeated acupuncture procedure visits provide the opportunity to build a therapeutic relationship, support lifestyle changes, and encourage self-care practices.¹³ TPIs are a low risk and effective needle-based intervention that could easily be used along with an integrative approach in a primary care setting.

We advocate for further research into the clinical application of integrative, comprehensive, multidisciplinary approaches in the routine, and compassionate care of CDH patients.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Justin G Laube  <https://orcid.org/0000-0002-1483-0609>

References

1. Sheikh, HU. Approach to chronic daily headache. *Curr Neurol Neurosci Rep.* 2015;15:4.
2. Garza I, Schwedt T. Diagnosis and management of CDH. *Semin Neurol.* 2010;30(2):154–166.
3. Cha MJ, Moon HS, Sun JH, et al. Chronic daily headache and medication overuse headache in first-visit headache patients in Korea: a multicenter clinic-based study. *J Clin Neurol.* 2016;12(3):316–322.
4. Blumenfeld AM, Varon SF, Wilcox TK, et al. Disability, HRQoL and resource use among chronic and episodic migraineurs: results from the International Burden of Migraine Study (IBMS). *Cephalalgia.* 2011;31(3):301–315.
5. Mathers C, Fat DM, Boerma JT. *The Global Burden of Disease: 2004 Update.* Geneva, Switzerland: World Health Organization, 2008.
6. Turkdogan D, Cagirici S, Soylemez D, et al. Characteristics and overlapping features of migraine and TTH. *Headache.* 2006;46:461–468.
7. Yancey JR, Sheridan R, Koren KG. Chronic daily headache: diagnosis and management. *Am Fam Physician.* 2014;15:89(8):642–648.
8. Silberstein SD, Blumenfeld AM, Cady RK, et al. OnabotulinumtoxinA for treatment of chronic migraine: PREEMPT 24-week pooled subgroup analysis of patients who had acute headache medication overuse at baseline. *J Neurol Sci.* 2013;15:331(1–2):48–56.
9. Ahmed F, Parthasarathy R, Khalil M. Chronic daily headache. *Ann Indian Acad Neurol.* 2012;15(Suppl 1):S40–S50.
10. Wachholtz A, Malone C, Bhowmick A. The chronic migraineur and health services: national survey results. *J Pain Manag Med.* 2015;1(1):103.
11. Adams J, Barbary G, Lui CW. Complementary and alternative medicine use for headache and migraine: a critical review of the literature. *Headache.* 2013;53(3):459–473.
12. Pritzker S, Katz M, Hui KK. Person-centered medicine at the intersection of East and West. *Eur J Pers Cent Healthc.* 2012;1(1):209–215.
13. Schiapparelli P, Allais G, Rolando S, et al. Acupuncture in primary headache treatment. *Neurol Sci.* 2011;32 Suppl 1: S15–S18.
14. Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd edition (beta version). *Cephalalgia.* 2013;33(9):629–808.

15. Stark CD, Stark RJ. Sleep and chronic daily headache. *Curr Pain Headache Rep.* 2015;19:468.
16. Scher AI, Stewart WF, Lipton RB. Caffeine as a risk factor for chronic daily headache: a population-based study. *Neurology.* 2004;63(11):2022–2027.
17. Bigal ME, Rapoport AM. Obesity and chronic daily headache. *Curr Pain Headache Rep.* 2012;16(1):101–109.
18. Nicholson R, Bigal M. Screening and behavioral management: obesity and weight management. *Headache.* 2008;48(1):51–57.
19. Böwing G, Zhou J, Endres HG, Coeytaux RR, Diener HC, Molsberger AF. Differences in Chinese diagnoses for migraine and tension-type headache: an analysis of the German acupuncture trials (GERAC) for headache. *Cephalalgia.* 2010;30(2):224–232.
20. Maciocia G. *The Foundations of Chinese Medicine, A Comprehensive Text for Acupuncturists and Herbalists.* London, England: Churchill Livingstone; 2005.
21. Sierpina V, Astin J, Giordano J. Mind-body therapies for headache. *Am Fam Physician.* 2007;76:1518–1524.
22. Nicholson R, Buse DC, Andrasik F, et al. Nonpharmacologic treatments for migraine and tension-type headache: how to choose and when to use. *Curr Treat Options Neurol.* 2011;13(1):28–40.
23. Smitherman TA, Black AK, Davis CN. Treatment of PTSD and chronic daily headache. *Curr Treat Options Neurol.* 2014;16(10):312.
24. Robbins MS, Kuruvilla D, Blumenfeld A, et al. Trigger point injections for headache disorders: expert consensus methodology and narrative review. *Headache.* 2014;54(9):1441–1459.
25. Fernández-de-las-Peñas C, Cuadrado ML, Pareja JA. Myofascial trigger points, neck mobility and forward head posture in unilateral migraine. *Cephalalgia.* 2006;26:1061–1070.
26. Fernández-de-las-Peñas C, Cuadrado ML, Pareja JA, et al. Trigger points in the suboccipital muscles and forward head posture in tension-type headache. *Headache.* 2006;46:454–460.
27. Karadaş O, Gül HL, İnan LE. Lidocaine injection of pericranial myofascial trigger points in the treatment of frequent episodic tension-type headache. *J Headache Pain.* 2013;14:44.
28. Alonso-Blanco C, De-la-Llave-Rincón AI, Fernández-de-las-Peñas C. Muscle trigger point therapy in tension-type headache. *Expert Rev Neurother.* 2014;12(3):315–322.
29. García-Leiva JM, Hidalgo J, Rico-Villademoros F, et al. Effectiveness of ropivacaine trigger points inactivation in the prophylactic management of patients with severe migraine. *Pain Med.* 2007;8(1):65–70.
30. Linde K, Allais G, Brinkhaus B, et al. Acupuncture for migraine prophylaxis. *Cochrane Database Syst Rev.* 2009;21(1):CD001218.
31. Linde K, Allais G, Brinkhaus B, et al. Acupuncture for the prevention of tension-type headache. *Cochrane Database Syst Rev.* 2016;(4).
32. Wonderling D, Vickers AJ, Grieve R, et al. Cost effectiveness analysis of a randomized trial of acupuncture for chronic headache in primary care. *BMJ.* 2004;328(7442):747.
33. Sahai-Srivastava S, Sigman E, Uyeshiro Simon A, et al. Multidisciplinary team treatment approaches to chronic daily headaches. *Headache.* 2017;57(9):1482–1491.
34. Bronfort G, Nilsson N, Haas M, et al. Non-invasive physical treatments for chronic/recurrent headache. *Cochrane Database Syst Rev.* 2004;(3):CD001878.
35. Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain—United States, 2016. *MMWR Recomm Rep.* 2016;65(1):1–49.
36. Loder E, Weizenbaum E, Frishberg B, et al. Choosing wisely in headache medicine: The American Headache Society’s list of five things physicians and patients should question. *Headache.* 2013;53:1651–1659.
37. Lipton R, Tepper S, Reuter U, et al. (2019). Erenumab in chronic migraine. *Neurology.* 92(19):e2250–e2260.
38. ICER Staff and Consultants. Calcitonin gene-related peptide (CGRP) inhibitors as preventive treatments for patients with episodic or chronic migraine: effectiveness and value. Evidence report. [online] Institute for Clinical and Economic Review. https://icer-review.org/wp-content/uploads/2017/11/ICER_Migraine_Evidence_Report_053118.pdf. Published 2018. Accessed October 27, 2019.
39. Rosenthal B, Lisi AJ. A qualitative analysis of various definitions of integrative medicine and health. *Top Integr Health Care.* 2014;5(4):9.