

An Innovative Patient-centered Approach to Common Playing-related Pain Conditions in Musicians

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Abstract—Musicians are increasingly seeking out complementary and alternative medicine (CAM) to relieve suffering that results from playing-related pain conditions. Using an innovative patient-centered model, an approach has been developed that can incorporate various medical systems and therapeutics to offer safe, effective, affordable, and accessible health care for musicians. A case discussion explores how musicians, through combining different traditions of medicine in orchestration, can optimize their quality of life while meeting their needs of prevention and rehabilitation of occupation-related conditions. *Med Probl Perform Art* 2004; 19:170–173.

Musicians are often affected by playing-related pain conditions that include musculoskeletal overuse syndromes, myofascial pain syndromes, nerve entrapment syndromes, osteoarthritis, and fibromyalgia.^{1–5} Pain can interfere with their ability to play their instruments at their usual levels and can have devastating consequences on the professional, personal, social, and financial aspects of their lives.⁶

Musicians, like the public in general, are turning to practitioners of complementary and alternative medicine (CAM) to help relieve their distressing pain conditions that are often refractory to conventional medical interventions.^{1,2} In line with the insights of modern scientific research, the case study below demonstrates the potential to incorporate the approach and modalities of Chinese medicine into the conventional health care system to help musicians meet their health care needs.

CASE PRESENTATION: MYOFASCIAL NECK PAIN AND HEADACHES IN A MUSICIAN

A 47-year-old right-handed man was referred in February 2002 by a neurologist for chronic neck pain and headaches.

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The patient, an amateur pianist and mathematics professor, was in a state of good health until two years prior when he first noticed left-sided neck pain after sleeping with his neck in an awkward position. As his neck pain continued, he developed daily generalized headaches. These headaches were severe enough to interfere with his routine daily activities, which included an hour a day of playing the piano and composing music.

The patient's primary care physician initially prescribed a narcotic pain medication to help the patient get some relief from his headaches. The headaches subsided with pain medication but returned within a few hours, requiring him to take another dose. He awakened every morning with a headache and repeated the cycle of taking the narcotic medication followed by experiencing a withdrawal headache followed by taking more medication up to 6 times a day.

The patient was referred to a neurologist for evaluation after his symptoms persisted 3 to 6 months. A computed tomography (CT) scan showed no abnormality of the brain that would cause the headaches, but the findings suggested chronic sinusitis. The neurologist diagnosed the patient as having rebound headaches due to the frequent use of pain medication. He advised the patient to discontinue the narcotic.

The patient was seen and evaluated by the neurologist on numerous occasions, and aggressive attempts at medical management of his headaches and chronic sinusitis showed minimal benefit. These included courses of oral steroids, aggressive nasal hygiene, and referral to an allergist for potential desensitization and/or allergy treatments. The patient was referred to an otolaryngologist for his refractory symptoms and underwent endoscopic anterior and posterior bilateral ethmoidectomies, endoscopic bilateral maxillary sinusotomies, and bilateral partial middle turbinate resection in July 2002. His headaches did not improve with surgery.

The patient had further evaluation of his continuing headaches with a magnetic resonance imaging (MRI) scan in September 2002 that demonstrated incidental findings of previous strokes from hypertension. The patient was subsequently started on a beta-blocker in October 2002 to better manage his hypertension and as headache prophylaxis. He was also instructed to take a selective cyclooxygenase-2 (COX-2) inhibitor medication as needed.

The patient had temporary relief of his symptoms on the medications, but he began having headaches again within the next few months. Over the next year, his headaches worsened

to the point that he was evaluated by a second neurologist in January 2004. The neurologist made a diagnosis of tension headaches, and he also suspected rebound headaches because the patient was taking the anti-inflammatory agent every day. The patient was advised to restrict his use of pain medications, and, as the patient's neck pain raised the possibility of carotid artery dissection, an MRI/magnetic resonance angiography (MRA) scan of the head and neck was ordered. The patient was also referred to an integrative medicine clinic for evaluation and treatment of his chronic neck pain and headaches.

CASE DISCUSSION

This amateur musician underwent an extensive evaluation for neck pain and headaches. He was given the diagnosis of rebound headaches, tension headaches, previous strokes from high blood pressure, and chronic sinusitis. His chronic pain was refractory to multiple medications and surgery.

The biomedical concept of allostasis helps explain this patient's pattern of symptoms under a unifying cause. *Allostasis* is the process by which the mind/body system uses energy to maintain stability in the face of environmental, psychological, social, and physical stresses. Adaptation to changes in the external and internal environment is mediated by secretion of glucocorticoids and the activity of the autonomic nervous system, neurotransmitters, and inflammatory cytokines. Prolonged stress or stress that overwhelms the system's resiliency can cause pathophysiology.⁷

Similar to the concept of allostasis, wellness in Chinese medicine depends on the body's ability to use an energy-matter communication network represented by the meridian system, *qi* (energy flow), and *vital substances* to maintain a balance of interdependent components of the human body represented by *yin* and *yang* and the *five elements* (wood, fire, earth, metal, water). Chinese medicine physicians evaluate the effect of allostatic load on the body's functional systems as represented by the *zang-fu* organ network, and offer an individualized description of the illness process and the body's response to it as represented by the *zheng* pattern diagnosis.⁸ In modern terms, Chinese medicine has been said to embody a systems approach to health that emphasizes the inseparable nature of mind/spirit/body, the centrality of homeostatic balance and self-healing, and the importance of energetic flow.⁹

During the therapeutic process, this particular patient identified cervical muscle strain as the initial insult that led to a cascade of infrastructure decline. Rage caused by intense conflicts in his personal life potentially influenced his pain through biological, behavioral, and emotional mechanisms.¹⁰ As a musician, he was also at risk for a unique set of psychosocial, environmental, and mechanical stresses.¹¹⁻¹³ In this case, overloading repetitive microtrauma from poor ergonomics while playing the piano and composing may have perpetuated his condition.

A thorough physical examination, which included laying hands on the patient, demonstrated decreased range of motion of his neck and multiple trigger points¹⁴ in the left

cervical and thoracic muscles. His myofascial pain syndrome, lifestyle stresses, and poor sleep had not been previously documented or addressed. As his condition became chronic, muscle spasm became fixed in the neck and he developed additional functional symptoms.

The therapeutic plan consisted of trigger point injections, acupuncture, and a self-care program that included walking for exercise, dietary discretion that limited sugar and fat, yoga for stress management, and self-massage of acupressure points. To minimize microtrauma from the patient's participation in music, he was advised about proper ergonomics while playing piano and composing. The beta-blocker was continued for his hypertension and headache prophylaxis, and no medication changes were recommended. A low-dose muscle relaxant 1 hour before bedtime was considered if his myofascial neck pain and headaches and sleep problems were refractory to the lifestyle interventions and treatments in clinic. In this patient, herbal medicines would probably not be recommended because of the patient's comorbidities and the potential for herb-drug interactions.

The patient initially received weekly treatments and gradually implemented his self-care program into his routine. Over time, he came to terms with his rage, managed the conflicts in his personal life, and noted improved sleep. After several weeks of treatment, the patient stated that he had near-complete resolution of his symptoms. The MRI/MRA, previously ordered by the neurologist to rule out carotid artery dissection, demonstrated incidental findings consistent with previous strokes from hypertension, carotid vascular disease, and degenerative cervical spine changes. Considering the clinical course of this patient, it may be possible to prevent more advanced pain conditions and associated functional symptoms by recognizing early warning signs of depletion and making interventions to rebuild homeostatic reserve.

A validated quality-of-life questionnaire, the SF-36,^{15,16} demonstrated improvements at his 6-week follow-up compared with the baseline score at his initial visit (Figure 1). All measures recommended by the International Headache Society to research the efficacy of therapies for headache also improved, including the score on a validated headache instrument, number of headaches per week, intensity of headaches, self-assessment of clinical improvement, duration of headaches, and amount of medication used for headaches.¹⁷

CAM AND SCIENTIFIC EVIDENCE

Complementary and alternative medicine, as defined by the National Center for Complementary and Alternative Medicine (NCCAM) of the National Institutes of Health (NIH), is a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine.¹⁸ *Acupuncture*, used in the treatment of this patient, describes a family of procedures involving stimulation of anatomical locations on the body by a variety of techniques.

The traditional theory of acupuncture is based on the premise that there are patterns of energy flow (*qi*) through the body

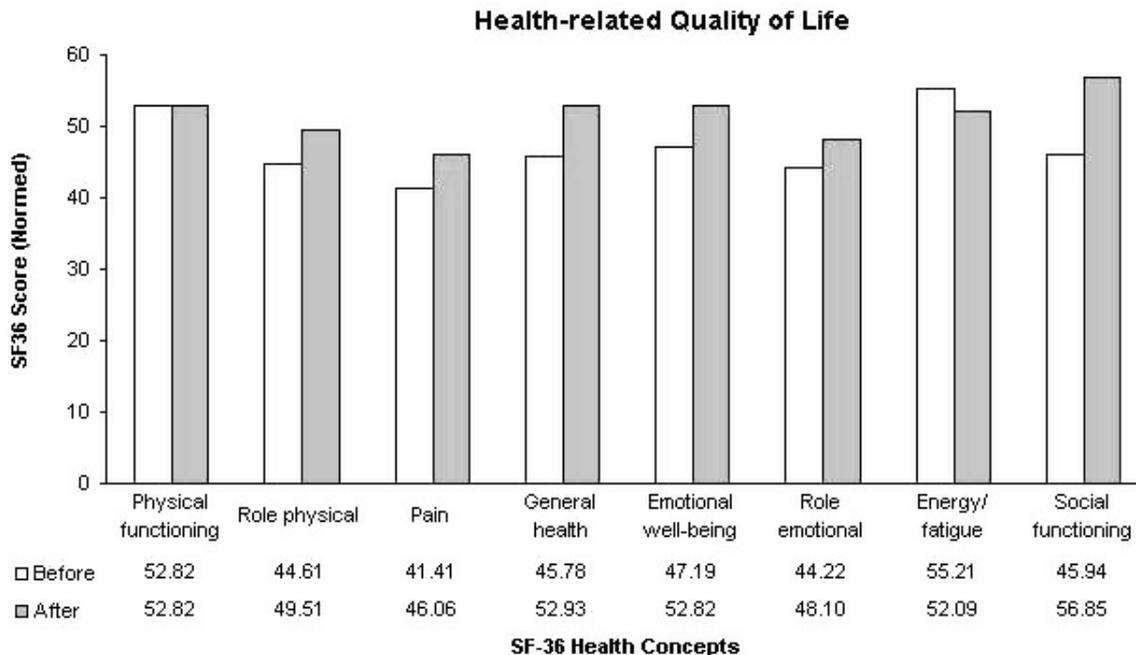


FIGURE 1. The SF-36 consists of 36 questions that were selected from a larger pool of items in the Medical Outcomes Study.^{15,16} Twenty of the items are administered using a past-4-weeks reporting interval. The SF-36 assesses 8 health concepts using multi-item scales (35 items): physical functioning (10 items), role limitations caused by physical health problems (4 items), pain (2 items), general health perceptions (5 items), emotional well-being (5 items), role limitations caused by emotional problems (3 items), energy/fatigue (4 items), and social functioning (2 items). An additional single item assesses change in perceived health during the last 12 months. This figure reports results for the 8 SF-36 version 2 scale scores, presented on a T-score metric, where the mean is 50 and standard deviation (SD) is 10 in the U.S. general population. The change in SF-36 scores ranged from -3 (for energy/fatigue) to 10 points (for social functioning). The 10-point change in social functioning is an improvement of 1 SD.

that are essential for health. Disruptions of this flow are believed to be responsible for disease. Acupuncture may correct imbalances of flow at identifiable points close to the skin.¹⁹

The most studied mechanism of stimulation of acupuncture points employs penetration of the skin by thin, solid, metallic needles that are manipulated manually or by electrical stimulation.¹⁹ Acupuncture has been shown to activate endogenous opioid mechanisms and modulate the limbic system and subcortical structures and may stimulate gene expression of neuropeptides.^{20,21} The growing body of science of the mechanism of acupuncture prompted the Food and Drug Administration in 1996 to reclassify acupuncture needles from the category of “experimental medical devices” to surgical devices regulated under good manufacturing practices and single-use standards of sterility.¹⁹

The following year, in 1997, NIH convened a group of experts and published a consensus statement on acupuncture. The experts concluded efficacy of acupuncture in the treatment of adult postoperative and chemotherapy nausea and vomiting and in postoperative dental pain. The group also suggested that acupuncture may be useful as an adjunct treatment or an acceptable alternative in other conditions such as addiction, stroke rehabilitation, headache, menstrual cramps, tennis elbow, fibromyalgia, myofascial pain, osteoarthritis, low back pain, carpal tunnel syndrome, and asthma.¹⁹ Subsequent systematic reviews of the efficacy of acupuncture for these pain conditions that often affect musi-

cians have not had consistent conclusions and generally recommend more studies with improved methodologies.²²⁻³⁷

CONCLUSION

The widespread use of CAM has made it imperative for health care professionals to have the knowledge and skills to enable their patients to use these therapies safely.³⁸ By attending to the patient’s individual needs and preferences, health care professionals who care for performing artists have the potential to partner with their patients to relieve suffering caused by playing-related pain conditions.

An innovative patient-centered model of health care that draws from different traditions of medicine has the potential to help musicians rehabilitate injuries and prevent further harm when they return to full physical activity. Continued research on alternative healing systems and practices will help sort out those therapies that can best be incorporated into a health care system for all that is safe, effective, patient-centered, timely, efficient, and equitable.³⁹

A musician who benefited from this comprehensive problem-solving approach for a chronic pain condition reflected on his experience as follows:

I was suffering. The pain was so severe I would have to lie still for one to four hours until it subsided. It was impossible to perform under the agony of my symptoms. Medications only

gave temporary relief. After discussing my frustrations, a physician helped me understand what was happening with my body. He performed acupuncture and educated me on how to massage pressure points on my hands, arms, face, and neck. With the treatments and daily self-care, my pain was gone in a few weeks, and I am requiring no medications. Thank you for your partnership and for East–West Medicine.

Jeffrey Osborne, rhythm and blues vocalist
[personal communication]

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