

Equine Acupuncture: Incorporation into Lameness Diagnosis and Treatment

Allen M. Schoen, DVM, MS

Author's address: Veterinary Institute for Therapeutic Alternatives (V.I.T.A.), 15 Sunset Terrace, Sherman, CT 06784. © 2000 AAEP.

Introduction

There has been a great increase in interest in veterinary acupuncture and chiropractic care in the equine area recently, both by the public and the veterinary medical community. With this increased awareness, there has been an increase in research and thus a better understanding of the physiologic basis and the clinical applications of these modalities. One of the main clinical applications in equine practice is related to the treatment and diagnosis of lameness, a significant component of equine practice. Acupuncture may be used as both an adjunct to our traditional lameness examination as well as an excellent addition to the treatment of lamenesses.

The history of equine acupuncture dates back to 2000–3000 B.C. during the Shang and Chow dynasties in China. Around 650 BC Bai-le wrote “Bai-le’s Canon of Veterinary Medicine,” one of the first veterinary textbooks. It was primarily on acupuncture and moxibustion and emphasized equine medicine.¹ In 1996 the AVMA stated; “Veterinary acupuncture and acuthery are considered valid modalities, but the potential for abuse exists. These techniques should be regarded as surgical and/or medical procedures under state practice acts. It is recommended that extensive continuing educa-

tion programs be undertaken before a veterinarian is considered competent to practice acupuncture.”² Postgraduate education in veterinary acupuncture is offered by the International Veterinary Acupuncture Society in Longmont, Colorado; The Chi Institute of Traditional Chinese Medicine in Gainesville, Florida; Colorado State University Veterinary School Continuing Education Program in Ft. Collins, Colorado; and introductory weekend seminars by the Veterinary Institute for Therapeutic Alternatives in Sherman, Connecticut. Postgraduate certification programs in chiropractic care are offered by the American Veterinary Chiropractic Association in Port Byron, Illinois.

Scientific Basis

Acupuncture may be defined as the stimulation of specific predetermined points on the body to achieve a therapeutic or homeostatic effect. Acupuncture points are areas on the skin of decreased electrical resistance or increased electrical conductivity (see Fig. 1). Acupuncture points correspond to four known neural structures. Type I acupoints, which make up 67% of all acupoints, are considered motor points.³ The motor point is the point in a muscle which, when electrical stimulation is applied, will produce a maximal contraction with minimal inten-

NOTES

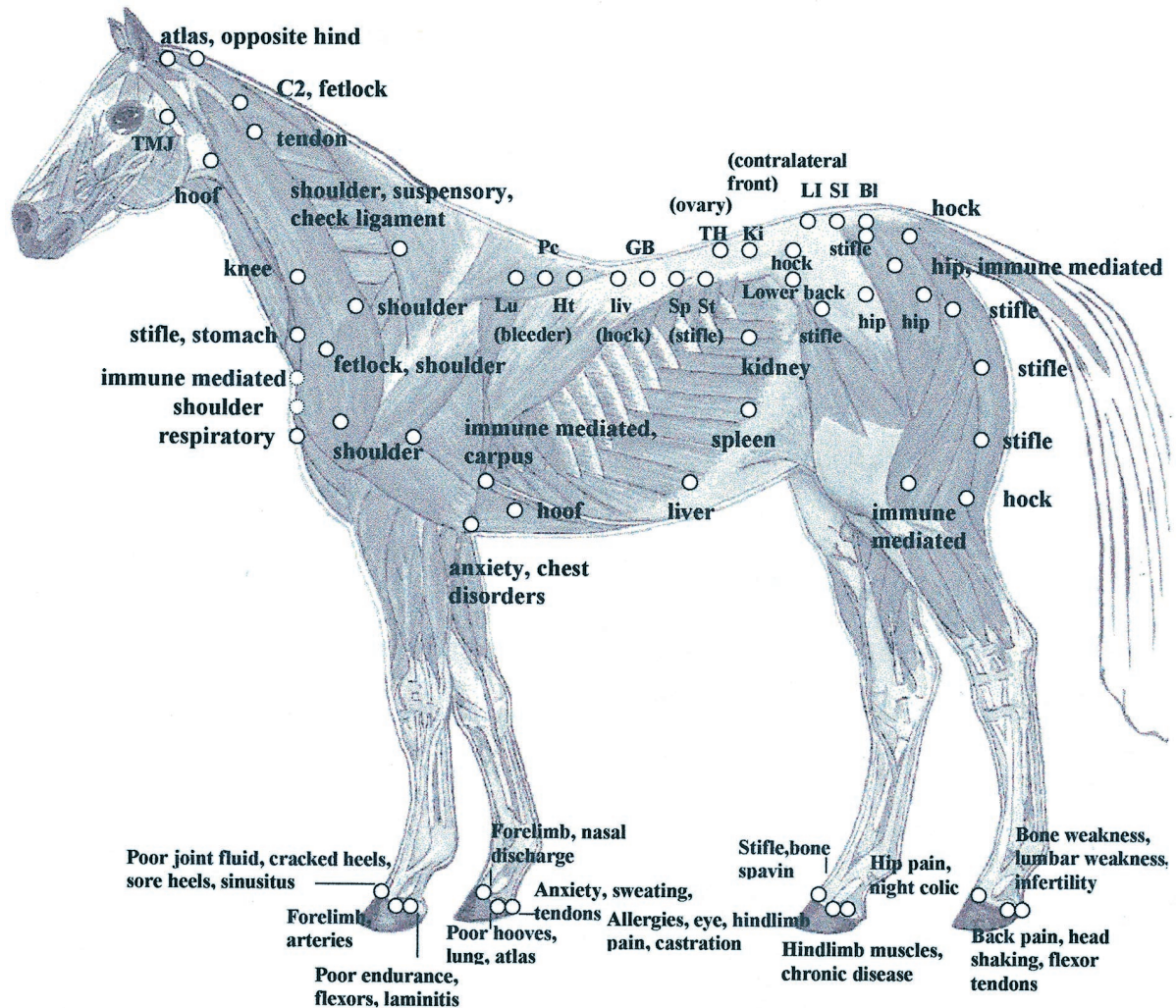


Fig. 1. Diagnostic acupuncture palpation points.

sity of stimulation. Motor points are located near the point where the nerve enters the muscle. Type II acupoints are located on the superficial nerves in the sagittal plane on the midline dorsally and ventrally.³ Type III acupoints are located at high density foci of superficial nerves and nerve plexi. For instance, acupoint GB-34 is located at the point where the common peroneal nerve divides into deep and superficial branches. Type IV acupoints are located at the muscle-tendon junctions where the golgi tendon organ is located.³ Recently, histologic studies have revealed that small microtubules consisting of free nerve endings, arterioles, and venules penetrate through the fascia at acupuncture points.

Acupuncture has many varied physiologic effects on all systems throughout the body. No one mechanism can explain all the physiologic effects observed. The traditional Chinese medical theories have explained these effects for four thousand years based on empirical observations and descriptions of naturally occurring phenomena. The western med-

ical theories include the gate and multiple gate theories, autonomic theories, humoral mechanisms, as well as the bioelectric theories.⁴ Detailed discussions of the neurophysiologic basis of acupuncture are reviewed in a number of texts.^{4,5,6} Essentially, acupuncture stimulates various sensory receptors (pain, thermal, pressure, and touch) which stimulate sensory afferent nerves and transmit the signal through the central nervous system to the hypothalamic-pituitary system. Various neurotransmitters and neurohormones are then released and have their subsequent effects throughout the body.

Techniques and Instrumentation

There are numerous techniques to stimulate acupuncture points. The following modes of stimulation are commonly used in equine acupuncture: dry needle stimulation, electroacupuncture, aquapuncture, moxibustion, laser stimulation, gold implants, and acupressure. Each method has its

indications and limitations. Detailed descriptions of these techniques are described by Altman.⁷

Acupuncture point selection is based on locating points on the body where stimulation will produce a beneficial change in the central nervous system by modulating ongoing physiologic activity. The exact location of equine acupuncture points has been debated over the past two decades. Some veterinarians base their acupoint location on the traditional Chinese equine acupuncture maps. The Chinese did not recognize meridians on nonhuman animals, but rather had points named based on their anatomical location or their function. Other veterinarians who received their training through the International Veterinary Acupuncture Society base their equine acupuncture point location on the transpositional method. This method extrapolates and transposes human acupuncture meridians to the equine, adjusting point location to equine anatomy. Currently, this is the most accepted approach.

The number of treatments required depends upon the condition treated and the chronicity of the problem. The length of treatment varies from 5 to 30 min.

Clinical Applications in Equine Lameness Exam and Treatment

Acupuncture is an excellent diagnostic aid as an adjunct to our conventional lameness examination. Acupuncture diagnosis is based on the level of sensitivity upon palpation of particular acupoints that have been found to correspond diagnostically with specific conditions. Many of the diagnostic acupoints are located lateral to the dorsal midline between the longissimus and iliocostalis muscles, along the acupuncture meridian known as the Bladder meridian.⁸ In addition, there are diagnostic points that are actually trigger points, knots or tight bands in a muscle. For instance, a triceps trigger point is often quite sensitive to palpation when a lower forelimb lameness is present. It correlates with the acupoint Small Intestine 9 (SI-9). It may not tell you exactly where the lameness is or what the etiology is, but it does indicate that something is reactive in that region. There are also diagnostic acupoints located around the coronary band both on the forelimb and hindlimb, known as Ting points.⁹ Each diagnostic acupuncture point may have four or five meanings, depending on which other points show up as reactive on your examination. For instance, one point, Large Intestine 16 (LI-16), located in a depression on the cranial border of the scapula, at the intersection of the cranial margin of the scapular muscle and the caudal margin of the brachiocephalicus muscle, cranioventral to the first thoracic vertebrae, may be reactive in relation to a forelimb lameness, cervical hyperpathia, or a contralateral hindlimb lameness.⁸ Sensitivity on acupoints along the Bladder meridian lateral to the dorsal midline along the back may indicate that there is a hindlimb lameness related to the stifle or hock, or

that there is a primary back problem related to the saddle fit, rider, or a conformational problem. In addition, reactivity may indicate internal organ problems via a somatovisceral reflex. The combination of reactive points often times will assist your diagnosis and aid you in localizing the cause of the problem. Often times one may localize a lower limb lameness along with a back problem.

Sometimes acupoint diagnosis will assist you in figuring out which may have come first, the lower limb lameness or the back problem. Acupuncture diagnosis can be an excellent adjunct to your equine lameness exam in addition to flexion tests, diagnostic nerve blocks, radiographs, ultrasound, and fluoroscopy. It is not uncommon to use all of our diagnostic capabilities including nuclear bone scans and still not arrive at a diagnosis. Acupuncture is often an excellent adjunctive technique that may assist in the elucidation of the problem. In human medicine, they find that musculoskeletal pain is often accompanied by muscle shortening in peripheral and paraspinal muscles from spasms and contractions.¹⁰ They also find that secondary trigger points and autonomic manifestations of neuropathies are also present in chronic musculoskeletal pain.¹⁰

Patterns of trigger points far distant to the primary problem, compensating for the primary musculoskeletal problem, have also been found.¹¹ These patterns are also evident in equine acupuncture lameness exams. For instance, you may have a primary hock or stifle problem. The horse then begins to compensate by favoring that leg and developing specific patterns of trigger points in the back and neck and contralateral forelimb. These show up as standard patterns of trigger points that may assist you in your primary diagnosis.

Acupuncture is also used successfully in the treatment of various equine musculoskeletal conditions either as a primary treatment or as an adjunct to conventional veterinary therapeutic techniques. For instance, one may have a primary hock problem and it may be treated with an intra-articular injection. However, it may not completely resolve the entire complaint the owner has. The horse may still "not be right" or be "off." There often times is secondary compensation and subsequent patterns of trigger points in the back or neck that remain unresolved. Acupuncture therapy may then be used to treat the secondary sequelae of the primary hock problem quite successfully. Hence, you may then get 100% resolution of the lameness and increased client satisfaction.

Acupuncture has been used successfully in the treatment of numerous equine lamenesses including chronic back problems,¹² hock or stifle problems, laminitis, navicular disease as well as various soft tissue injuries.¹³

Equine acupuncture may also be beneficial in the treatment of gastrointestinal conditions including nonsurgical colic, chronic diarrhea and post-opera-

tive ileus, reproductive, neurologic and respiratory conditions. Neurologic conditions that may respond to acupuncture include facial nerve, sciatic nerve, and radial nerve paralysis.

Acupuncture is an exciting new (yet ancient) diagnostic and therapeutic technique that one can incorporate into a conventional equine practice. If you are not adequately trained in acupuncture, you can refer to or work along with a veterinarian who is certified in veterinary acupuncture in difficult or challenging lameness cases. It offers an additional approach to diagnostic and therapeutic dilemmas that may not have adequate answers based on conventional western medicine. Further research will continue to explain the physiologic basis of acupuncture. Acupuncture will continue to be incorporated into equine veterinary practice as complementary therapy and as an adjunct to our therapeutic armamentarium as we develop a further understanding of its mechanisms of action. The latest textbook on veterinary acupuncture offers comprehensive descriptions and references on all aspects of equine acupuncture as well as a chapter on the integration of saddle fit, riding, shoeing, and chiropractic care along with acupuncture. Acupuncture can be an extremely beneficial adjunct in the diagnosis and treatment of equine lameness problems.

References

1. Jaggar D. History and concepts of veterinary acupuncture. In: Schoen AM, ed. *Veterinary acupuncture, ancient art to modern medicine*, Goleta, CA: American Veterinary Publishing Inc., 1994;5–18.
2. American Veterinary Medical Association, AVMA Directory, AVMA, 1993;55.
3. Hwang Y. Anatomy and classification of acupoints. In: Schoen AM, ed. *Veterinary acupuncture, ancient art to modern medicine*, Goleta, CA: American Veterinary Publishing Inc., 1994;19–32.
4. Smith F. Neurophysiologic basis of acupuncture. In: Schoen AM, ed. *Veterinary acupuncture, ancient art to modern medicine*, American Veterinary Publishing Inc., 1994;33–54.
5. Altman S. Acupuncture therapy in small animal practice. In: Ettinger S, ed. *Textbook of veterinary internal medicine*. Philadelphia: W.B. Saunders Co, 1989;484–498.
6. Stux G, Pomeranz B. *Acupuncture, textbook and atlas*. New York: Springer-Verlag, 1986;1–20.
7. Altman S. Techniques and instrumentation. In: Schoen AM, ed. *Veterinary acupuncture, ancient art to modern medicine*, Goleta, CA: American Veterinary Publishing Inc., 1994;75–06.
8. Snader M. Diagnostic acupuncture techniques in the equine. In: Schoen AM, ed. *Veterinary acupuncture, ancient art to modern medicine*. Goleta, CA: American Veterinary Publishing Inc., 1994;465–492.
9. Thoresen A. Equine ting zone therapy. In: Schoen, AM, ed. *Veterinary acupuncture, ancient art to modern medicine*. Goleta, CA: American Veterinary Publishing Inc., 1994;565–580.
10. Gunn C. *Treating myofascial pain*. Seattle, WA: University of Washington Press, 1989;7–14.
11. Seem M. *A new American acupuncture, acupuncture osteopathy*. Boulder, CO: Blue Poppy Press, 1993.
12. Klide A. Acupuncture for treatment of chronic back pain in horses. In: Schoen AM, ed. *Veterinary acupuncture, ancient art to modern medicine*. Goleta, CA: American Veterinary Publishing Inc., 1994;533–542.
13. Fleming P. Acupuncture for treatment of musculoskeletal and neurologic conditions in horses. In: Schoen AM, ed. *Veterinary acupuncture, ancient art to modern medicine*, Goleta, CA: American Veterinary Publishing Inc., 1994;499–532.