

Acupuncture in the horse

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Introduction

My first exposure to acupuncture in the horse came in 1981 while still a student at the University of Georgia's veterinary school. Here, I observed Janet Steiss (now a professor at the Tuskegee University) conducting an acupuncture clinical trial on horses with chronic lameness from either laminitis or navicular disease. This was published and the results, on the one hand, could be regarded as encouraging, while on the other, were statistically insignificant (18). Janet highlighted the difficulties in conducting controlled clinical trials in equine acupuncture by reviewing her work at the 1999 Congress of the International Veterinary Acupuncture Society (IVAS) in Lexington, Kentucky.

Two years later, in my first job as a veterinary surgeon, came my first personal experience with the related therapy Shiatsu (acupressure), which came about as the result of a severe kick injury to my hip from a horse. The spinal shock rendered me unconscious for a short while and I was taken by ambulance to the local hospital where I had an examination, including x-rays. I was discharged with a pair of crutches free of any fracture with a firm swelling the size of a grapefruit on the side of my right hip and unable to take any weight on my right leg due to pain.

Additionally, I was given a course of strong pain medication (Darvaset) plus anti-inflammatory drugs and instructed to stay confined to bed for 3 weeks with my leg elevated with frequent ice compresses for the first few days.

The inconveniences included the fact that I was due to start a locum position for a solo equine practice in five days and I dreaded the notion of disappointing a practitioner looking forward to his much-needed holiday.

One of my equine clients at the time, Michael Farley, held acupressure clinics at the local medical centre and, fortunately, was able to fit me in two days after the injury. In spite of medication it was still very painful to be upright and excruciating to put the slightest weight on my right leg. Michael applied firm thumb pressure for about two minutes at each of approximately 12 to 15 points many of which were located around and on the swelling and as he predicted the local sensation was one of exquisite piercing pain slowly fading to a vague numbness.

After about 30 minutes and a few expletives my right hip felt numb and I was able to stand on it and walk, albeit with quite a limp. On the next day I returned limping but without crutches and only half a "grapefruit" on my hip. He repeated the acupressure treatment, mobilised my limb and instructed me to go out and jog about three miles. In spite of my protests I did as instructed and found the swelling completely resolved and I was able to ambulate almost normally. I went away very impressed to locum as planned and Michael went on to become well known in the U.S. as a human and equine acupressure therapist and for developing a range of equine orthotics including the Farley Boot.

A few months later I attended an introductory equine acupuncture workshop hosted by the University of Pennsylvania's large animal veterinary teaching hospital at New Bolton Center. This was a practical demonstration on

the anatomical location of some of the more important acupuncture points and treatment techniques in diagnosing and treating back pain.

Professor Alan Klide and clinician, Martin Benson of the University, had recently conducted controlled trials on treating chronic low back pain in performance horses with acupuncture¹¹. At the time I had a perfect experimental "guinea pig" at home; Patton, my thoroughbred hunter gelding in his late teens who had acquired a chronically stiff and stilted low back and pelvic action over the past few years. He also had collapsed heels and flat soles and was frequently slightly lame due to foot soreness. While this lameness would resolve when put on butazolidin, the low back and pelvic stiffness did not respond.

When I practised locating the appropriate acupuncture points for low back and pelvic pain on Patton I was amazed by how much local muscular spasm and evidence of pain could be elicited by simple digital pressure on very discrete locations. I excitedly punctured five very tender acupuncture points (Bladder 25 and 26, and animal Bai Hui at the lumbosacral site) with ordinary hypodermic needles (21 gauge x 1.5 inch) and injected 2 ml of vitamin B 12 solution into each point (a technique popular in the US, referred to as aquapuncture).

Three days later, I was astounded to see him turnout into the paddock after his night in the stall with a youthful and exuberant gallop and series of playful bucks which I hadn't seen from him for many years. This rejuvenation extended to being ridden where suddenly I could feel a looseness in his lower back and an impulsion coming from his hind limbs; he was obviously enjoying feeling so well and the ride was wonderful. This effect faded out over the course of two to three weeks, but it was reinstated each time I retreated him.

I became increasingly aware of two quite separate categories of pain, one responsive and the other unresponsive to non-steroidal anti-inflammatory drugs (NSAIDs), the latter responding to a physical and *natural medicine*. I also noted a strong connection between the acupuncture-controlled pain and behavioural adjustment.

Acupuncture origins

The origins of acupuncture lie in prehistoric times and may have originated in cultures outside China. Evidence for this recently came to light with the investigations of the largely preserved frozen corpse of the "Ice Man, Oetzi", who has been dated to approximately 5500 years. Oetzi has clearly identifiable dark stained points on his skin independently confirmed by several acupuncturists as classically described Bladder channel points at sites along his arthritic lumbar spine. He has other clearly marked classical acupuncture points on his legs and around his arthritic ankle²¹. It is not certain that the Southern Alpine man in that era had access to Chinese medicine practices assuming these had already been developed in China at that time.

The earliest written records of acupuncture are usually credited as originating from the Han dynasty in China around 3000 years ago. The Chinese *Nei Jing* texts from about 300-100 BC and the *Nan Jing* from the first century are regarded as the most important written documents from the historical context.

These works described their observations and theories of anatomy, physiology, pathology and treatments that included acupuncture and moxibustion (heat treatment by burning mugwort). They marked the genesis of medicine as distinct from religion (demonology) in China and focused on symptoms as somatic rather than supernatural¹. During this period the emphasis on environmental factors causing disease had largely replaced the more primitive notions of demons and spirits inflicting disease. The main threats to health were seen as excesses of the environmental forces (*Yi qi*) of wind, cold, damp, and heat entering a body deficient in its defence forces (*Wei qi*). The theories incorporated their already long-standing universal principles of *yin-yang* (opposites) and the concept of five phases (correspondences with the elements of fire, earth, metal, water, and wood) which are still taught as integral parts of traditional Chinese medicine (TCM). There was also recognition of the importance of balance and interaction with the environment.

At that time the human body's internal anatomy was described as composed of 11 organs: the five solid (*yin*) organs of the heart, liver, spleen, lungs, and kidney, and six

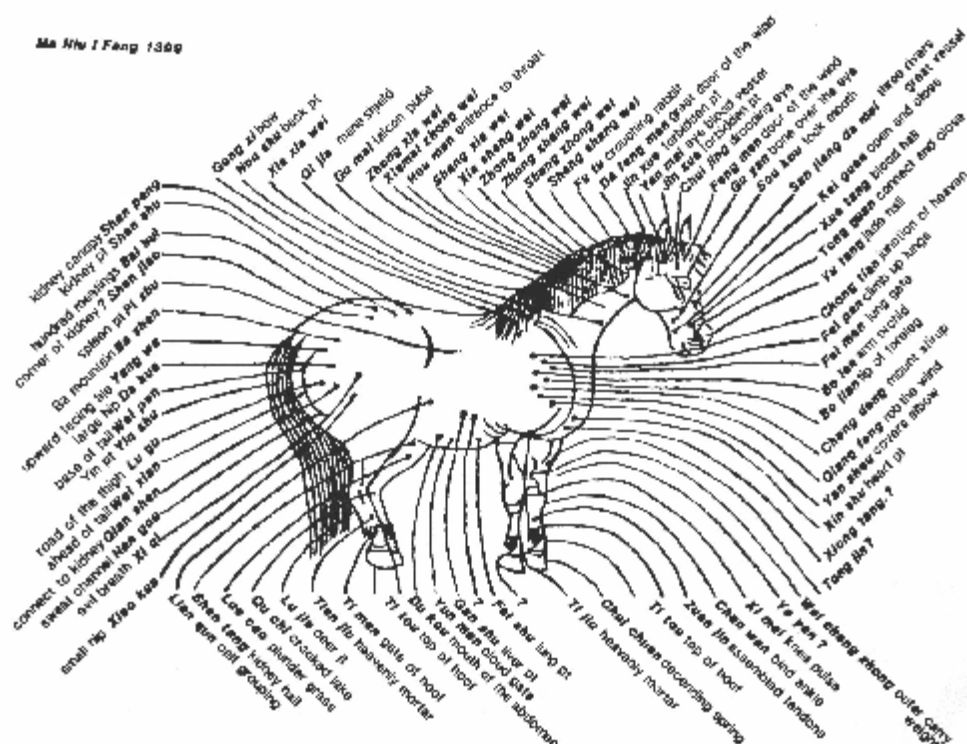


Fig 1: 14th Century Chinese equine acupuncture chart (reprinted with permission from Mosby).

hollow (*yang*) organs of the gallbladder, stomach, small intestine, large intestine, bladder, and the "tripleburner" (made up of the pleural and peritoneal cavities). A 6th solid organ, the "heart governor" (translated as the pericardium, but without literal relation), was added later perhaps as much for symmetry as functional need. These organs were all linked to particular muscular and dermal distributions identified as 12 regular channels (*Jing-luo*) with 135 acupuncture points located bilaterally. The dorsal and ventral midline "extraordinary" channels with another 25 points were also described.

The physician would use the system of correspondences between the organs and their superficial channels to firstly diagnose the condition of the organs by palpation at certain points over the body and of the pulse in the radial and other arteries and secondly to treat any imbalances or illness using acupoints which could influence their activity. It is now known that visceros-somatic reflexes account for many of these observations.

The Systematic Classic of Acupuncture and Moxibustion, 282 AD, described 649 (300 bilateral) acupuncture points on the 14 channels with treatment indications, needle depth and retention time for each, and

introduced the emphasis on disease prevention. Around this time Chinese medicine was making its way into other Asian countries including Korea, Vietnam and Japan. Sun Si-miao, a famous Chinese physician at the turn of the seventh century (Tang dynasty) refined and modernised the format of acupuncture charts which described more "extraordinary" channels and systematised the measurement system for the accurate location of acupuncture points still used today. He also described the use of painful points (a-shi points) in conditions which modern Western medicine has recently described as myofascial trigger points in Myofascial Pain Syndrome (MPS). "Puncture wherever there is tenderness" (Sun Si-miao).

Veterinary acupuncture history

The first known veterinary acupuncture book was written in the 6th century and described the treatment of more than 40 diseases in farm animals including the horse². More than 30 veterinary acupuncture books were written during the period of the Sui dynasty from 590 - 617. The most famous veterinary acupuncture text came from 1608, which remained very influential in China to the present day.



Fig 2: Author's case treated for myofascial pain syndrome. Pilomotor response along the bladder and governing vessel channels during acupuncture; the focal spots of raised hair occur precisely at the acupuncture point locations along the thoracolumbar distribution of points described in Figures 5 and 6, and develop along numerous vertebral segments some distance away from the nearest points actually needled. This demonstrates segmental and non-segmental somato-sympathetic reflexes from the needle response (see also Figure 4).

Interestingly, none of the traditional Chinese veterinary acupuncture texts described acupuncture channels in animals as were described in humans and only up to 167 acupuncture points in the horse with location and specific action were documented (fig.1). Some of these points were named the same as the human equivalent with the same indication but were located quite differently anatomically; e.g. the organ association points. The Chinese names of acupuncture points give information regarding the point's location and indication requiring an appreciation of Chinese idioms and cultural nuances. Learning these by their translated Western name or a simple numeric code has been regarded as too problematic for most.

In the 1970's, due mainly to demand from Western veterinarians, animal acupuncture charts were devised with the 14 main channels and acupuncture points transposed from the human charts which allows for the use of the international alphanumeric acupoint designation agreed by the World Health Organisation.

Traditional Chinese veterinary medicine (TCVM) also never described the system of five-phase treatment in animals. This requires the precise location of the five command points (i.e. a "wood" point, "fire" point, etc.) for each of the 12 regular channels which in man occur from the elbows and knees distally. Due to the anatomical variation between man and animals their transposition becomes very contentious, especially in the horse with only one digit compared to man's five.

Veterinarians have experienced excellent results using this transpositional system and it most definitely facilitated the teaching of acupuncture in the West, but it has led to many disputes about the validity and specificity of animal acupuncture points as well as the issue of adopting the human channels system. It has also demonstrated the flexibility and ability of acupuncture to undergo further development and modern Western veterinarians have brought many other useful innovations into the practice.

A significant practical problem is that of reporting and documenting acupuncture treatments in order to provide information which can be tried and tested independently. Most Western veterinary acupuncturists will be familiar with the transpositional system, where each point is identified with an alphanumeric code relating to its position along the particular channel. For example, BL 20 refers to the 20th point along the bladder channel, which is regarded as the association point for the spleen (SP) channel. It is located in the last intercostal space in man and is transposed to the 17th (last) intercostal space in horses along the border between the *longissimus* and *iliocostalis* muscles.

This point is, however, recognised as the large intestine (LI) association point in the traditional Chinese equine acupuncture charts. At least in this instance the indications for the LI and SP association points are very similar, but in other cases there are genuinely significant discrepancies. Allen Schoen discusses this controversy in his

book when introducing the section on large animal acupuncture where he decided to include chapters detailing both systems¹⁶.

In 1974, following a trip to China, a group of predominantly American veterinarians formed the *International Veterinary Acupuncture Society* (IVAS) to host annual international conferences, regular training courses leading to certification in veterinary acupuncture, and advanced TCM acupuncture and herbology courses. IVAS now has a worldwide membership and the IVAS courses are held in several countries each year. The Austrian Veterinary Acupuncture Society and Veterinary College in Vienna hosted a very successful 26th IVAS Congress 2000 and focused on science in acupuncture.

I was delighted to be included as one of the speakers and enjoyed meeting veterinarians from around the world who have made important contributions to the greater understanding of the effects of acupuncture. The veterinary school in Vienna has a long tradition in investigating veterinary acupuncture going back to 1833.

The Association of British Veterinary Acupuncturists (ABVA) was founded in 1987 with Jill Hewson as Secretary, the late Robert Allpress as Treasurer and John Nicol, a former president of BEVA, who led as president of the ABVA until 1998. The ABVA has grown to approximately 100 members and holds two meetings annually including a spring meeting in conjunction with the annual BSAVA congress and an autumn meeting held in conjunction with the British Medical Acupuncture Society.

We (in the ABVA) have run the IVAS training course in England since 1997 and now have approximately 45 members who have become certified and another approximately 40 veterinarians enrolled in the current course being held at the Bristol veterinary school's teaching hospital. The requirements for IVAS certification includes attendance at all four of the four day modules, 40 hours of seeing acupuncture practice with certified members, a detailed case report, and passing a written and practical examination.

Traditional theories, their interpretations, and the debates

A detailed discussion of the traditional Chinese medicine (TCM) theories is beyond the scope

of this chapter. However, it may be helpful to consider a fundamental aspect of TCM presentation in the West to understand the debates which occur both within the acupuncture community at large and within the conventional medical world. The popular Western discussion centers on the notion of *Qi* as "energy" or "life force" circulating with a metaphysical form of blood through a system of meridians or channels. This "energy flow in meridians" cannot be measured or discovered in terms of medical science and therefore the entire basis for acupuncture becomes untenable in Western medicine.

This interpretation leads to some TCM schools teaching that acupuncture can only be understood by accepting a belief system of a metaphysical nature based on Taoism, with other schools teaching TCM as a system of paradigms which gives guidelines to the selection of an appropriate therapy, and other schools (particularly Western medical) dismissing all TCM principals. But this energetics story does not accurately reflect TCM and the more realistic translations put it much closer to "real medicine"!

In China, there is no gulf between the modern medical approach and the use and study of acupuncture. Many Western-manufactured TCM advocates see medical research as an anathema and insult to acupuncture which, they argue, is proven by virtue of the test of time. Unlike the situation in veterinary medicine, Western "energetics" TCM schools in the UK and some other countries train and certify non-medical lay people to practice on human subjects. They feel under threat by the medical community, which argues that acupuncture should only be practised by the medically trained. They also often feel they are the true defenders of acupuncture as they have not been "contaminated" by Western science. Many veterinary TCM enthusiasts have bought into the energetics story and teach it as the "alternative" rather than the "complimentary" view of health. This approach can only help keep acupuncture at the fringe of medicine.

To help explain the translation dilemmas I approached a well-known TCM expert and teacher, D E Kendall, OMD PhD, who wrote:

"As a practitioner serving the public's needs, there is a moral obligation to always search for the truth in what you are doing. To just

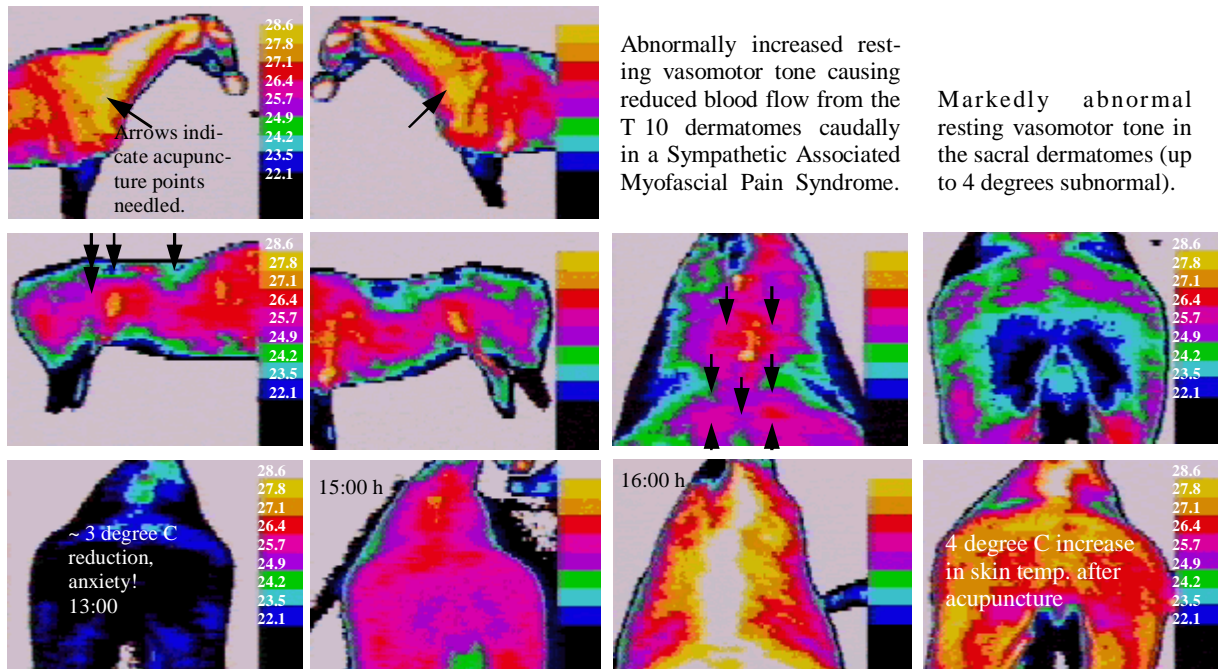


Fig:4 Acupuncture: LI 16; BL 18, 25, 26; GB 28; Bai Hui (arrows). Initially increased sympathetic tone due to needle anxiety in this individual (lower left). Progressive normalisation of the abnormal vasomotor tone over a three hour period (below right, 16:00); restores homeostasis in autonomic function via somato-sympathetic reflexes (first documented thermographically in horses by the author).

So qi can mean vital air, or it can collectively refer to nutrients, defensive substances, vitality substances, and vital air. Qi can also mean function. So you can have a condition of qi stagnation, which can refer to impaired dispersment of nutrients by the liver, or it can mean impaired blood delivered vital substances to an area or internal organ. As far as qi xu, this can mean a deficiency in any of the vital substances, it can mean impaired lung function, and since qi is used to indicate function, it can also mean functional impairment of an internal organ. The critical point is, one has to understand the context in which these terms are used. Without this crucial test there is no way to correctly understand how to translate TCM."

(Personal communication)

The other fundamental translation debate concerns the notion of meridians instead of distribution and collateral vessels (of the vascular system) representing the *jing-luo*. D. E. Kendall explains that in the *Nei Jing* great emphasis is placed on classifying the vascular

circuits in terms of deeper, transitional, longitudinal, collateral, and fine vessels. Confirming this fact is the importance placed in TCM on the palpation of the pulses detected in the arteries at 11 specific areas on the body including over the radial and carotid arteries. Acupuncture points were placed where finer branches of a specific distribution vessel supplied the superficial regions.

The idea of meridians appears to come about from several factors including the superficial lines drawn up linking certain acupuncture point distributions, the phenomenon of *propagated sensation* along the particular pathways reported by strong responders to acupuncture, and experiments demonstrating lower skin electrical resistance along these pathways. Birch and Felt also give very detailed and carefully analysed accounts of these and other interpretation dilemmas in their book, *Understanding Acupuncture*. Clearly, once TCM is expressed in a competent and physiologically aware manner, it offers a great deal of medically valid insights into health maintenance; and a great deal of useless exercises can be dismissed trying to prove / disprove what was never intended.

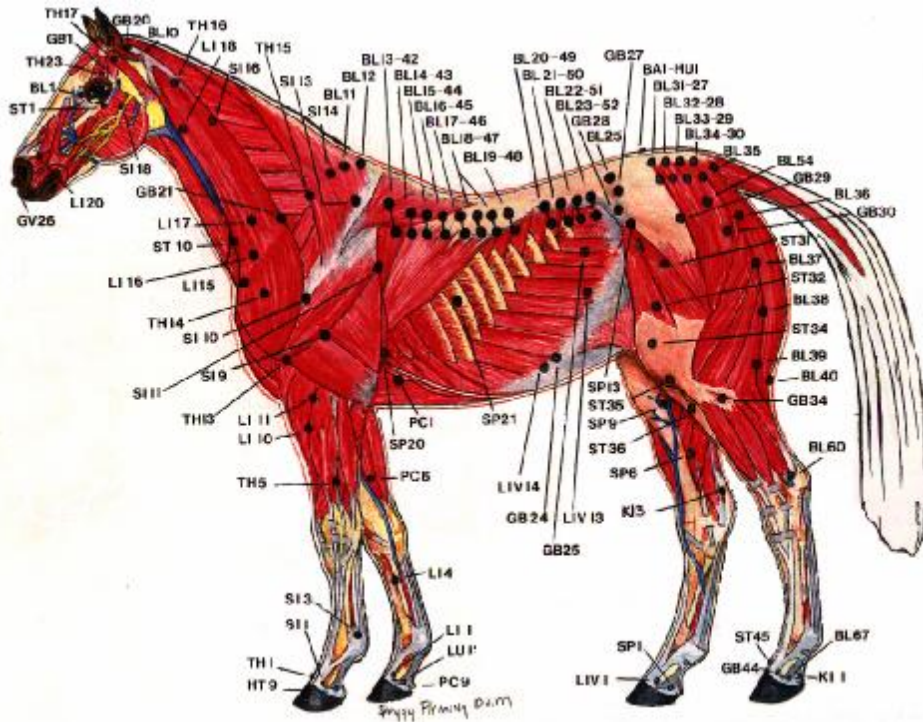


Fig 5: Transpositional equine acupuncture chart (from Peggy Fleming's: *Equine Atlas of Acupuncture Loci*).

Acupuncture in modern medicine

Anatomic and histologic examinations of acupuncture points have demonstrated important features which help explain their unique nature. The most significant element involves the nervous system in the form of free nerve endings, neuro-vascular bundles perforating the superficial fascia, sympathetic fibers of the local vessel, muscle spindles, and tendon organs. Neurophysiological studies demonstrates that acupuncture stimulates A-delta and C nociceptive fibers along with mechanoreceptors which elicit complex segmental spinal and central reflexes that initiates a descending control. Segmental spinal effects involve inhibitory enkephalinergic responses while centrally there is a release of beta-endorphin and a descending serotonergic and adrenergic response. The analgesia produced by acupuncture can be blocked by naloxone and also by local anaesthesia of the acupuncture point.

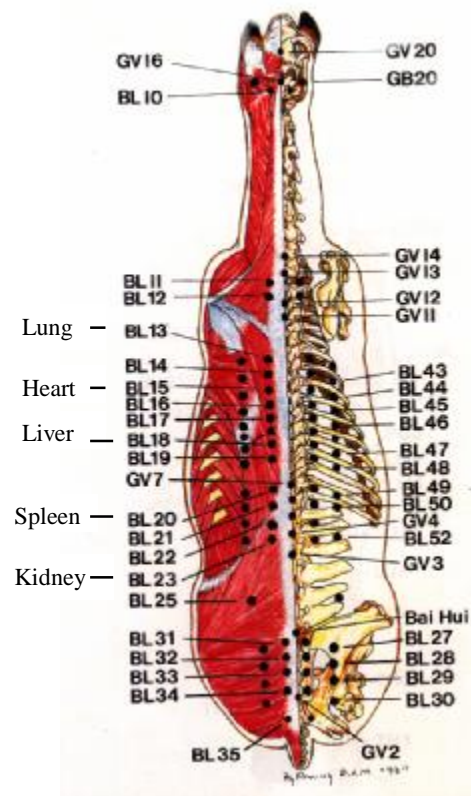


Fig 6: Transpositional equine acupuncture chart. Some of the organ "association points" are labelled; note the correlation to segmental visceral location and innervation. Compare to the distribution of the pilomotor response shown in Figure 2.

Autonomic nervous system responses from acupuncture occur via somato-sympathetic and somato-visceral reflexes^{3,8,17}. A-delta visceral and somatic fibres have a similar distribution in the dorsal gray matter and tract of Lissauer in the dorsolateral funiculus; and visceral and somatic inputs also converge in the spinothalamic tract. These afferents can induce antidromic activation of each other giving rise to the phenomenon of referred pain. This provides for a mechanism of autonomic modulation by acupuncture stimulation. The author has demonstrated this phenomenon in horses with chronic segmental vasomotor disturbance by thermographic studies before and after acupuncture. Acupuncture resulted in the normalisation of vasomotor tone which is under sympathetic/autonomic control⁵ (Fig. 4)

Local immune and inflammatory defence reactions are activated by needle stimulation through histamine, bradykinin and other inflammatory mediators and the complement system. The neuro-humoral and other physiological responses to acupuncture are illustrated in Figure 3.

Certainly, there is a great deal more scientific research required to fully understand the effects of acupuncture and to determine the most effective acupuncture technique for any particular problem. There are, however, many inherent problems in the scientific evaluation of acupuncture particularly in the application of the randomised control trials. Traditional acupuncture requires individualised treatments, even within a group of patients sharing the same condition, and there is a valid point to be taken by the fact that each individual has a unique response and adaptation to any particular disease.

Controlled trials require standardised treatments, which means the use of precisely same points for each patient at each treatment. This is referred to as "cookbook acupuncture" and is regarded as inferior by most acupuncturists. The author agrees with this and will always treat even the same patient using different acupuncture point combinations in follow-up treatments based upon the acupuncture assessment at each occasion. Many other issues including differentiating sham acupuncture from placebo effects are discussed in detail by Lewith and Vincent¹⁰ and by Jaggar⁷. An additional problem confronting any research including acupuncture research in the horse is the problem of adequate sample size and adequate funding.

Chronic pain problems

Acupuncture is best known for its use in treating pain. Perhaps it is taken for granted the veterinary surgeon would have a clear understanding on the subject of pain and pain relief, and what could be more fundamental than providing relief from pain? However, I was shocked at the inadequacy of my working knowledge on the subject since undertaking a detailed review of pain research and noting how little of it was/is taught in primary and secondary veterinary education. Clearly the level of knowledge determines the level of competence and hopefully all of us wish to be competent in pain recognition and management! Here is a brief outline of some important elements of pain mechanisms taken from *The Pain Series*, published by The Lancet, 1999. If you find much of the following highlighted in italics unfamiliar ground then you may agree that much more attention should be given to this subject. Understanding these concepts also forms the basis for understanding the mechanisms of acupuncture.

The CNS mechanisms that control the perception of a noxious stimulus include: *afferent integration in spinal cord, upstream processes, and downstream modulation from the brain*¹⁴.

Nociception

- Detection of tissue damage transmitted up A delta and C fibres
- May be biased by the "inflammatory soup"
- NSAIDs modify the "inflammatory soup"
- Blocked by local and regional anaesthesia
- *CNS downstream modulation*

Perception of pain

- From nociception
- From lesions in the peripheral or central nervous system
- May be in the absence of nociception
- *Intensity of chronic pain may bear no relation to the extent of tissue injury or other quantifiable pathology*

Central sensitization effects

- Enlargement of the area where stimulus will activate neurons
- Increased response to stimulus
- Lowered threshold to input
- From changes in function, chemistry, and structure of neurons (*neural plasticity*)

Symptoms of neuropathic pain

- Persistent or paroxysmal
- Shooting, lancinating, or burning
- May depend on *sympathetic nerve activity* (Sympathetic Associated Pain Syndrome) (Fig 4)
- Stimulus-independent paresthesias (spontaneous A fiber activity) and *hyperaesthesia* (abnormal sensitivity to sensory stimuli)
- Stimulus-evoked *hyperalgesia* (extreme sensitivity to painful stimuli): mechanical, thermal
- *Allodynia* (pain from non-noxious stimulus): can occur in absence of ongoing tissue damage or previous injury, e.g. *low back pain, headache, myofascial pain syndrome, and complex regional pain syndrome.*

Findings from diverse studies have indicated that activity in axons located in the lumbar sympathetic chains contributes to the activation of spinal pain pathways and to *low back pain*. These findings from nociceptive neurons serving lumbar paraspinal tissues suggest that low back pain may be exacerbated by activity in both efferent and afferent fibers located in the lumbar sympathetic chain, the efferent actions being mediated indirectly through sympathetic-sensory interactions in somatic and/or visceral tissues⁴. This is why I believe a great deal can be learned by thermographic scanning of horses with suspected back pain, or indeed any cases of a pain-driven performance problem. The information gained portrays the physiological state of the sympathetic nervous system in vasomotor regulation. I have found a very high correlation in the presence of persistent segmental vasoconstriction and vasomotor asymmetry in equine chronic back pain cases as has been demonstrated in thermography studies in humans⁶.

I have also documented thermographically the effective normalization of vasomotor function from acupuncture in many horses with these faults (Fig. 4)⁵. Another phenomenon that graphically illustrates the somato-sympathetic reflexes and verifies the specific location of certain acupoints is the pilomotor

response occurring in some horses during acupuncture. Compare the case illustrated in Figure 2, demonstrating this reaction, with the acupuncture charts from P Fleming's "*Equine Atlas of Acupuncture Loci*" (Figs 5&6).

Finally, *myofascial trigger points* (MTrP) which give rise to *myofascial pain syndrome* (MPS) deserve special mention. These are defined as highly localized and hyper-irritable foci within a palpable taut band of muscle with focal tenderness, a local twitch response from stimulation, and a referred pain zone elicited by compression²⁰. A 71 % degree of correspondence between the location of MTrPs (always in the endplate zone) and traditional acupuncture points in humans has been reported along with the treatment recommendation of trigger point injections or dry needling¹⁵. This subject more than any other provides the introduction and a large focus for most Western medical acupuncture training courses. It is equally an excellent starting point for any veterinary medical acupuncture training. In my opinion most performance horses (as most people) suffer a varying degree of MPS and the successful identification and treatment of the affected muscles will relieve the pain and enhance performance.

The prerequisite for identifying MTrPs and practicing acupuncture is a thorough and careful palpation technique. The systematic examination of approximately 100 acupuncture (motor) points bilaterally in the horse provides the most important information for the selection of appropriate points to treat. Chartered physiotherapists are trained to recognise and treat these sites by other means including acupressure, stretch and myofascial releases, and electrostimulation. Equine practitioners without acupuncture exposure can learn from them palpation skills required in locating these sites.

Equine acupuncture practice

Many Western veterinarians find it easiest to start practising acupuncture using fine gauge hypodermic needles to inject a solution (1-10 mls) such as normal saline, vitamins (esp. B 12), mild

irritants, local anaesthetics, and steroids. This can be an effective way to relieve tender myofascial trigger points and is perhaps the easiest introduction to the practice of acupuncture.

Practitioners shy of the word acupuncture and TCM concepts may prefer to describe this as trigger point needling or intramuscular stimulation (IMS) for which there is relatively widespread acceptance in western medicine. Many defenders of the traditional theories of acupuncture also insist on differentiating this practice from acupuncture. It is fair to say that this is the most simplistic level of performing acupuncture and does not reflect the skills and knowledge required to practice acupuncture across the full range of medicine. The tools used may vary between practitioners and in addition to using hypodermics include traditional acupuncture needles of differing lengths, electroacupuncture units, lasers, moxa, and implants, e.g. gold beads, catgut suture, or skin staples.

Physical examination techniques include the palpation findings of a large group of "diagnostic points". These occur mainly along the face, neck, back, thorax, abdomen, and hind-quarters and includes the "*back shu*", and "*alarm or recruitment*" acupoints. The examiner notes the underlying muscular tone and whether any pain is demonstrated by either light or deep pressure applied to each of the acupoints. Painful points indicate either a local problem or a referred pain problem occurring either segmentally or along the channel distribution of either somatic or viscerosomatic origin. Additional signs such as a local muscular twitch response, sustained muscular fasciculation, or muscular spasm indicates a suspect myofascial trigger point response. The nature of the horse in terms of its underlying anxiety, fear, or other psychological status is taken into account and obviously can affect palpation findings, so skill is required in the examination approach. TCM recognises that excesses or deficiencies in an individual's "spirit" insults the health and is an important element in the overall assessment and treatment.

The skilled practitioner can apply acupuncture to virtually any disease. Once one recognises that acupuncture primarily promotes and restores

the body's own neuro-humoral adaptive systems then one can apply it to any condition where these homeostatic mechanisms are impaired. In some conditions it can be the sole treatment particularly chronic syndromes that have a poor response to conventional therapies and where there's a significant risk from undesirable side effects to long-term medications.

For example, consider the case of a 15 yr. old Arabian gelding referred to me with chronic obstructive pulmonary disease (COPD) who lived outside permanently, had become refractory to oral clenbuterol medication and was exercise intolerant. On my first examination his resting respiratory rate was 42 breaths per minute and he had all the hallmarks of chronic advanced COPD. Tenderness was detected at acupoints recognised as reflecting (referring) lung pathology, (located segmentally relative to the chest's innervation). These were acupunctured with Chinese acupuncture needles along with distal limb points like the "Master Point" for the chest, Pericardium 6. Within 15 minutes of leaving these needles in situ the respiratory rate fell to 22. He was receiving no other therapy other than the same strict dust management as before and on the next visit a fortnight later he was reported as markedly improvement. His respiratory rate was recorded at 24 and during acupuncture treatment it reduced to 12. He was put back into light ridden exercise, treated once more after three weeks, and has had no recurrence of COPD symptoms for over 18 months since his last treatment.

In many other cases acupuncture is best used in conjunction with conventional therapy and other physical therapies. Acupuncture treatments can be successfully applied to chronic musculoskeletal pain, and to neurological, dermatological, reproductive, respiratory, digestive, ophthalmologic and behavioural disorders. Not only are there a large number of empirical acupoints described in the literature for most of the common chronic conditions in equine practice ("cookbook acupuncture"), but there are also physical examination techniques and TCM paradigms that help determine the acupuncturist's selection of acupoints.

In my experience acupuncture practice enables one to:

- Gain further useful information on the condition of the horse
- Develop a holistic examination procedure
- Aid identifying pain and dysfunction in poor performance syndromes
- Develop a handle on cases where conventional diagnostics are often without useful findings
- Demonstrate that the great majority of horses with acquired training resistances and bad behaviour suffer painful conditions
- Provide a very effective complimentary therapy based on provoking and fostering the natural adaptation and homeostatic mechanisms
- Provide clients wishing to avoid (e.g. under competition rules) or minimise the use of drugs an optional alternative therapy with negligible side effects risks.

It is unfortunate in my opinion that many Western acupuncturists prefer to relate this information in terms of "a *Qi* ("energy") blockage or stagnation in the Meridian" rather than in the current medical context. It is also unfortunate that some influential equine acupuncturists, esp. in America, gave rise to the notion that pain at certain points was specifically diagnostic for lameness localisation and for certain infections, particularly Herpes and EPM (Equine Protozoal Myelitis).

Firstly, these observations were anecdotal and not tested until fairly recently where it was shown by two independent veterinary acupuncture researchers that the "diagnostic point" specificity in lameness localisation

was very poor^{12, 13, 19}. Secondly, the unsubstantiated claims made by certain equine acupuncturists provides an easy target for the acupuncture critics and damages the overall image of acupuncture as a serious medicine. Let us not forget that medicine is an art and a science, not a pure science.

In spite of the efforts by some acupuncturists to resist Western medical scrutiny, and the efforts by some within the Western medical community to dismiss acupuncture outright, there is genuine progress being made in understanding the legitimate opportunities for integrating the ancient art of acupuncture into advanced medicine. It is encouraging that several of the veterinary colleges in the United States including Florida State, Tufts, Cornell, and Colorado offer veterinary acupuncture courses to postgraduates.

There is a long way to go before veterinary acupuncture is officially recognised along with a standardised certification by the *American Veterinary Medical Association*, the *Royal College of Veterinary Surgeons* and other national veterinary bodies. This is a goal of the ABVA. The study and practice of acupuncture in the horse is very rewarding in all respects. It has genuinely enabled me to provide improved health-care and a greater understanding of the nature of health problems. One can only hope that funding will become available to help clarify questions of acupuncture technique and efficacy.



Acknowledgments

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