

Anm. der Verfasserin:

Beim diesem Artikel handelt es sich um den ersten aus Deutschland stammenden Veterinär-Akupunktur-Artikel. Der Inhalt ist inzwischen durch Erkenntnisse und Forschungen von Dr. med. vet. Draehmpaehl überholt. Erschienen im 'American Journal Of Acupuncture', Vol. 4, Nr. 3, 1976.

VETERINARY SCIENCE

Acupuncture Point Topography in the Horse

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Abstract: Chinese texts describe some 130 acupuncture points on the horse, but fail to identify the "master points" and their locations. This lack of clearness was the reason for a more precise examination of the acupuncture points and their location on the horse, especially those found on the limbs. Three different point detectors were used to measure the electrical skin resistance, revealing similar acupuncture points on a healthy Thoroughbred mare. This locating technique was later reproduced on healthy German Warmblood horses, resulting in the same acupuncture point topography. Points are electrically dynamic and accessible for detection and characterization.

.CACH VETERINARIAN who wishes to practice acupuncture on animals, must first study the basis of acupuncture in man, and then by comparative anatomy apply it to animals with the same degree of skill. This is especially challenging in the case of the horse.

The Chinese gave a description of 130 acupuncture points and their locations, but they did not mention points of stimulation, sedation, source, connecting, or alarm points. Furthermore, most points have new names, and some points like those named in man, are located in other body areas. For example, the Tsu San Li (St-36) point on the horse is shown in the same place as the Yang Ling Chuan (GB-34) on the human body. The Yang Ling Chuan point in the horse is in the

same location on the human body as point Hsi Yang Kuan (GB-33). Another confusing example for the conscientious veterinarian are the very important "associated" points (Shu points) of the Bladder meridian. In man they are located on the first circuit of the Bladder meridian. In the horse, according to the Chinese charts, they are all mixed up with the points of the second circuit of the Bladder meridian.

Material and Methods

This confusion was the main reason for our examination of the acupuncture points and their location on the horse, especially those located on the limbs. To accomplish this, three different acupuncture point detectors were used (1. Kutosens-10, 2. Neuralstab, 3. Punctoscope Sedat) to measure the electrical skin resistance. All three detectors revealed the same acupuncture points, which were reproducible at any time. This technique for locating the points was first used on a sound, healthy Thoroughbred mare, and later identified on healthy German Warmblood horses.

To begin with, our experiments showed an amazing number of acupuncture points on the fore and hind legs, with reduced electrical skin resistance. These low skin resistance areas were confluent, with the confluent areas located over nerves or nerve endings, coinciding with meridian-like lines that were identified. On the fore limb these lines corresponded with the median nerve relating to

Original article translated from the German by H. Grady Young, D.V.M., International Veterinary Acupuncture Society, P.O. Box 958, Thomasville, Georgia 31792.



FIG. 1. Meridians of Large Intestine, Triple Heater, and Small Intestine, shown on the fore limb of the horse.

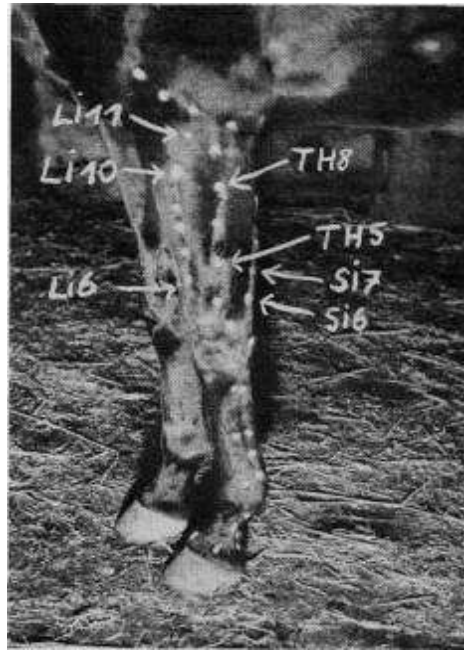


FIG. 2. Various acupuncture points on the fore limb. Three different point detector models were used for verification of points.



FIG. 3. Topography of the Heart Constrictor (Pericardium), Heart, and Lung meridians shown on the fore limb of the horse.

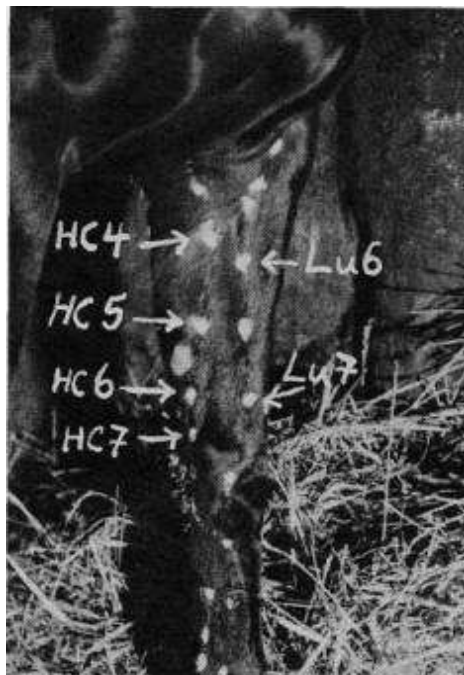


FIG. 4. Electrical skin resistance measurements established many acupuncture points on the fore limb of the horse, as illustrated above.



FIG. 5. Shown is the topography of the Gall Bladder and Stomach meridians on the hind limb of the horse.

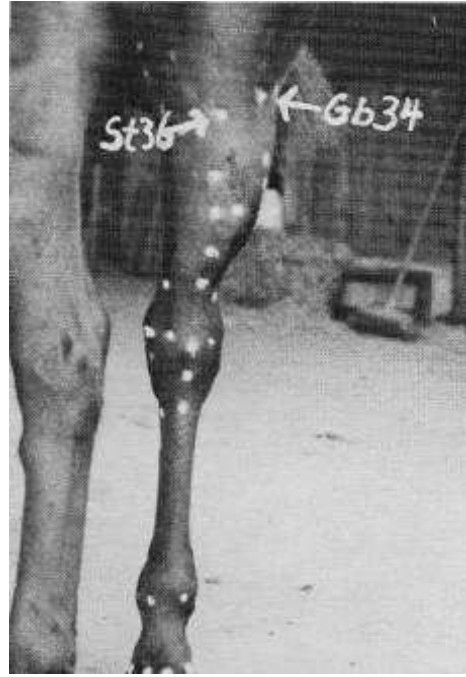


FIG. 6. Close-up view establishing the location of the important points St-36 and Gb-34 on the hind limb of the horse.



FIG. 7. Junction of the Spleen, Liver, and Kidney meridians at point Sp-6, as determined by multiple skin resistance measurements.



FIG. 8. Large number of acupuncture points were found on the medial side of the hind limb. The point Spleen 6 is emphasized here.

the Pericardium meridian (HC), and the ulnar nerve matching those points on the Small Intestine meridian (Si), and Heart meridian (H). The musculocutaneous nerve matches the Lung meridian (Lu), and the two branches of the radial nerve correspond to the Large Intestine meridian (Li), and the Triple Heater meridian (TH).

It was noted that when the electrical resistance of the point finder was raised one step, it was possible to locate the small branches of these nerves. This proved especially true with the nerve branchings distal to the fetlock joints.

On the hind limbs the lines followed the course of the ischiadicus nerve and the cutaneous sura plantar (Bl), and distal to the stifle they followed the fibularis superficial nerve (GB), and the fibularis deep nerve (St), and the path of the tibialis nerve and saphenous veins.

If the resistance of the point detector was diminished, these lines were no longer found, but the acupuncture points were identifiable at separate distinct points. These included all those points described by the Chinese, as well as a great many additional points. Many of these points are clearly related to nerve branchings and crossings.

To locate those acupuncture points that correspond to man and horse, the anatomical position of each point on the horse must be identified by comparative anatomy. This means that a detailed knowledge of the dermatomes, myotomes and skeletomes is required, but to date these structures are not yet known in the horse. In such a case, other parameters must be taken into account, as for instance skin innervation, topography of muscles, and muscle innervation, while considering segmental phylogenesis. Only if there is a correspondence of these criteria can we postulate that these are homologous acupuncture points in man and horse. At least the use of these homologous points in the therapy will reveal whether or not there is the same action or effect.

An excellent example for these problems is the situation below the carpus and tarsus of

a horse. Following the idea of homologous reasoning, let us take for example, the Ho Ku (Li-4) point:

In man there is —

1. A space between the metacarpal bones I and II.
2. The radialis nerve supplies the anatomical skin region, and
3. The muscle region of the interosseus muscle (ulnaris n.).

This anatomical background does not exist in the horse, so the Ho Ku point (Li-4) cannot be reconstructed in this way. Whereas, the Chung Chung (HC-9) point does exist on the medial bulb of the heel, for the metacarpal III and its phalanges represent the middle finger of man completely, including the nerve.

In the case of the horse it is less difficult to start at the proximal end of the carpal joint, and identify the homologous points of HC-4-7, TH-5-9, Si-6-8, and H-4-7. The Heart meridian joins the Heart Constrictor meridian (HC) in the carpal region. Agreement can also be found in Li-5-12, and Lu-6-8, between man and horse; however, the skin innervation is not homologous, but only analogous.

Discussion

Upon examining the pictures (Figs. 2 and 4) of the fore limbs, our first impression will be that the meridians of the horse include more points than the same meridians in man. This may be another hint pointing to analogism, because it is well known that the meridians in man contain many additional points between the classic numbered main points.

It was also found that on the hind limbs on the lines with reduced resistance distal to the stifle, that there were "maximum points" just as on the fore limbs. For instance, points on the Stomach meridian followed the same structures in the horse as in man. For example:

1. The deep fibularis nerve.
2. The tibialis anterior muscle, and the long digital extensor, and
3. The skin region of the saphenous veins.

The points of the Gall Bladder meridian correlate to:

1. The superficial nerve.
2. The extensor digital lateralis muscle (which is the analogous structure to the peroneus muscle in man, because the fibula of the horse is a rudimentary bone), and
3. The skin innervation area of the fibularis nerve.

Following these facts it appears that there is no evidence for any difference in man and in the horse concerning the Tsu San Li (St-36) point, and the Yang Ling Chuan (GB-34) point. Needless to say that the exact detection and treatment of these two points is of fundamental value for our acupuncture therapy.

The only exception to all previously mentioned correlations between acupuncture points and nerves in the horse was found on the medial side of the hind limb. For instance, the crossing of the Liver, Spleen and Kidney meridians at San Yin Chiao (Sp-6), which

could definitely be determined by skin resistance measurements, obviously has no neural correspondence (Fig. 7). In man, it is a known fact that only two thirds of all acupuncture points correspond to nerve points. This means that 66% of the acupuncture points are based on "reflexology" (according to Dr. J. Bischko of Vienna).

On the neck and rump the situation shows a different picture. Here the meridian points jump from one segment to the next, like the To Mo (GV), Jen Mo (CG), and the Bladder meridian, whereas on the limbs the meridian points below the elbow and stifle stay within one or two segments. That seems to be the explanation for the restricted validity of the neural theory concerning the acupuncture meridians.

In any case, our recent results in acupuncture topography indicate the existence of a continuous meridian flow.