

Veterinary

Laser Acupuncture on Horses with COPD

*Dr. med vet Uwe Petermann, prakt Tierarzt, Akupunktur, Germany e mail:
DrUwePetermannMelle@t-online.de*

Abstract

105 horses with extreme COPD were treated exclusively using laser acupuncture. No other medicinal or alternative therapy was administered. All patients had been treated previously over a lengthy period (3 months - 10 years) with conventional therapies such as cortisone, clenbuterol, drugs for secretion- removal, hyperinflation, inhalation and so on without success. The acupuncture lasers used were infrared pulsed lasers with 60 and 90 watt peak pulse power with an impulse width of 200 nsec. As pulse frequencies, those from NOGIER and BÄHR (between 100 and 10000 Hz) were used. The horses were treated 4 - 12 times on each point for 30 sec. (1 case 29 times, on average 6.5 times). The interval between treatments was 4 - 7 days. In most of the patients (n=79) a clear spontaneous reaction could already be seen during the first session. The horses were able to breath deeper and remove secretion in a manner similar to that of infusion therapy. 15 patients that had not improved after 3 or 4 treatments, were treated by laser on marked points by their owners every day for 2 - 3 weeks with a 30mW continuous laser, 30 sec. on each point. After conclusion of the treatment, 73 horses appeared to have been cured. In other words, there was no more coughing, no more difficulty in breathing; the respiratory tract was clean and showed no signs of inflammation. The horses seemed to be in excellent physical condition. 17 horses were much better and had no more problems with their stamina, but sometimes had a slight cough while being ridden. 11 horses were also better than before and could be ridden, but their stamina was not completely restored and they were still coughing so that the result was not deemed satisfying. Only 4 horses showed no signs of improvement following the treatment.

Keywords: laser, acupuncture, horse, COPD

Introduction

Although veterinary acupuncture is almost 3000 years old since Sunjang, the father of veterinary acupuncture has lived, 900 BC, (KOTHBAUER, O., MENG, A. 1983) one finds only few scientific articles about acupuncture on horses. Most of the publications in this area are concerned with isolated case studies which are quickly discounted as a placebo effect or self healing. In the face of the really outstanding work and, above all, the effect (BERGSMANN, O. 1977, ZEROBIN, K. 1991) of carefully directed and expertly carried out acupuncture (GLARDON, O. and SCHATZMANN, U. 1981, PETERMANN, U. 1989, WESTERMEYER, E. 1993), this is very difficult to understand. The reason, first and foremost, is that in the universities and clinics, which generally produce the greatest part of the scientific literature, acupuncture is not established as a method of treatment.

The first known description of chronic obstructive pulmonary disease (COPD) does not go quite as far back as the origins of veterinary acupuncture. Aristotle described the following symptoms in stable horses in his "Animal Healing": "Symptoms are also incurable in which the heart is affected, whereby the flanks slowly collapse in a pathological way .. and they draw up their hips" "(GOHLKE 1957). It also did not escape him that this was a domestication illness which was closely connected with being kept in a stable. COPD is unknown in wild horses and horses kept all year round on pasture (THURLBECK, W.M. and LOWELL, F.C. 1964, GILLESPIE, J.R. and TYLER, W.S. 1969, COOK; W.R. 1976). This fact certainly deserves attention when it comes to prophylactics and therapy in that very ill patients should be kept in the ideal "all year round on pasture" state as far as circumstances will permit. This means allowing the patients the maximum possible freedom to move in and outside their stable as they like. In the English-speaking world, the synonyms for COPD are heaves and broken wind. The term COPD itself (chronic obstructive pulmonary disease) has been taken from human medicine.

The basic pathological mechanisms of the obstruction take place in the finest branches of the bronchial tree, in the inlet channels to the alveoli, namely the bronchioles. These passages no longer have a cartilaginous septal framework running through them so that the main effect, the bronchial spasm, encounters no resistance here. As a further lumen narrowing effect, there are the more or less viscous secretion deposits as a result of dyscrinie and hypercrinie. The obstruction is finally completed by an often substantial oedema of the mucous membrane (DEEGEN, E. 1979). In the case of serious COPD, this obstruction leads to a valve effect in which more air is drawn into the alveoli during inspiration as can be pressed out during expiration. This is so called as "air trapping" (MCPHERSON, E.A. and LAWSON, H.K. 1974). This increasingly distends the alveoli and leads to a functional emphysema.

All the pathological principles described above are vegetatively and humorally controlled

so that here a therapy of targeted stimulation of nerve points, called trigger or acupuncture points, offers itself as a therapy which can act in a regulatory manner (MELZACK, R. and WALL, P.D. 1965, MELZACK, R. et al. 1977, HEINE, H. 1987, ZOMANN, A. 1990).

The so called „Controlled acupuncture" does not just emphasise treating the symptomatic points, e.g. Lu 7, Bl 13, Bl 17 etc. (see diagram). An attempt should also be made to remove the disorder seen in acupuncture as the joint cause of the allergic reaction. Here the allergen is seen merely as the trigger, not the cause of the allergic illness. You can find the real cause of allergic reaction by a systematic diagnosis and treatment of disorders, e.g. scars especially along the line of the lung and kidney meridians and periodontitis. Based on the classical Chinese acupuncture, controlled acupuncture was further developed in the last 15 years by the Deutsche Akademie für Akupunktur und Auriculomedizin (DAA/AM german academie for acupuncture and auricular medicine)*. Whereas classical medicine sees the causes of COPD in infections of the upper pulmonary tracts, especially influenza and herpes, in air pollution, allergies, lung worm infection and perhaps also genetic factors (GERBER, H. 1968, SCHATZMANN, U. and GERBER, H. 1972, LITTLEJOHN, A. 1978, HAYER, L. and SASSE, H.H.L. 1980), controlled acupuncture regards the accumulation of these external disorders together with additional internal disorders as the central cause of the allergic reaction. Especially periodontitis is responsible for disorders of the vegetative functions or, in the words of acupuncture, of the meridian functions (KLUGER.L. 1990). In addition, scars in the meridian line which did not heal properly are also a cause. Seen morphologically, it is a question here of chronic granulomatous inflammation surrounded by demarcation tissue (KELLNER, G. 1979). As laser therapy has an outstanding demarcation effect and promotes the healing of wounds (MESTER et al. 1969), it is also understandable that they can also set a demarcation in motion again that had come to a halt and thus so can eliminate the disorder (PETERMANN, U. 1998, POPP, F.-A. 1984). The organism's ability to adapt can be reduced through the accumulation of these internal and external stress factors that it is no longer in a position to react sensibly to stimuli (e.g. allergens). The medical phrase for this changed reaction situation is „adaptation syndrome" (SEYLE, H. 1953). This has been known for almost 50 years and is confirmed time and again in the treatment of such disorders by the quite spontaneous positive reactions of the patients. The direct reactions of the patient to laser treatment of such a scar or a periostitis is demonstrated by 3 case studies.

Patients

The following work reports on the effectiveness of controlled laser acupuncture treatment of 105 horses suffering from extreme COPD. Only patients with pronounced dyspnea in the resting state and an extended lung percussion area at least 4 fingers wide were selected. All horses had been treated with the usual methods, with mucolytics, bronchodilators, cortisone, inhalation using an ultrasonic mist generator and, to some extent, with hyperinfusion therapy (DEEGEN, E. LIESKE, R: and FISCHER, J. 1980,

DETLEF, E., KÖHLER, L. and ALLMELING, G. 1982, DEEGEN, E. 1988) over a prolonged period (2 months to several years) without success. The study involved 6 stallions, 40 mares and 59 geldings. The horses were between 4 and 30 years old (average age 12.6 years). In 42 of the horses, the stabling conditions has already been optimised over a longer period of time (sawdust on the floor, silage feed, hay soaked in salt water, open stabling , access to pasture all the year round).

Examination Procedure

After the report of the owner asking for duration, course run by and seriousness of the illness, stabling and feeding conditions, quality of the feed, previous treatment, the horses were examined externally (frequency and depth of breathing, type of breathing, breathing through the nostrils, running nose). The entire body was also examined for any scars of substantial size. Finally, a thorough auscultatory examination and a percussion of the lung area was carried out. In the process, attention was paid to the lung percussion area and to any areas of unusually loud resonance. Because of the extreme dyspnea of the patient, no breathing stimulation or inhibition was used during the initial examination. In the post-examination, a inhibition of the breathing was carried out for about 45 sec. followed by an auscultation (but not for the 4 patients which showed no improvement). A bronchoscopy was carried out on some of the patients (n=35) as a supplement to the clearly identified clinical findings. Viscosity, amount and distribution of the secretion, mucous membrane oedema in the neighbourhood of the bifurcation, reddening of the mucous membrane were assessed. Subsequently, the acupuncture diagnosis was carried out using the method of the Deutsche Akademie für Akupunktur und Aurikulomedizin (BAHR, F. 1997, PETERMANN, U. 1999) to find the optimum acupuncture points for the treatment. This method makes a consistent and reproducible diagnosis possible so that the points at which the therapy is to be applied and also any local disorders in the meridian lines can be determined.**

Therapy

For the individual treatment of each patient, each of the points diagnosed by the controlled acupuncture was treated with an acupuncture laser for 30 sec. The following points were most often found: Bl 13, (influence point of the lung meridian), Bl 14, (influence point of the meridian heart/sexuality), Bl 17, (influence point of the diaphragm), Lu 7 and Ki 6 as cardinal point pair, Bl 40, (allergy point and histamine point of the ear acupuncture), Bl 23, (influence point of the kidney meridian), CV 17 (respiratory alarm point of the three heaters) and St 40, (mucus dissolving point, beta-agonist point), Li 13 (ACTH point) as well as the points TH 5 and Ki 3, important for all inflammation processes in the organism. In addition, the individual scars and periodontitis points found during the acupuncture diagnosis were also treated with the laser, sometimes up to 5 minutes per point.

- Picture 1) little scar found as a disturbing focus in a COPD patient near Lu 11
Picture 2) a bigger scar found as a disturbing focus in another COPD patient also near Lu 11
Picture 3) COPD patient with an iapparent sinusitis in the first maxillar molar tooth, treated with a laser douche (8x 10 watt impulse laser diodes)

The treatment of all acupuncture points were carried out with a 60W and a 90W impuls-acupuncturelaser (Reimers + Janssen Company) for 20 - 30 sec. per point. These are diode impuls- lasers with a wavelength of 904nm and a pulse duration of 200nsec.

Picture 4) My 14 years old acupucture laser used in the treatment of the patients according to this study (untill today my favorite laser machine)

Picture 5) One of my high end modern impuls- acupuncture lasers 50 Watt

Picture 6) One of my high end modern impuls- acupuncture lasers 90 Watt

Essentially, the frequencies A, B and C of the frequency bands according to NOGIER (292, 584, 1168 Hz) as well as the frequency 5 (frequency for the cardinal points) from the frequency bands according to BAHN (9592 Hz) were used for the cardinal points. 4 - 12 treatments were carried out at intervals of 4 - 7 days (1 patient had 29 treatments, on the average 6.5 treatments). 15 patients, wheather they reacted immediatly to the treatment with a significant improvement in breathing, they were again experiencing very serious breathing difficulties by the next treatment date. In these 15 patients the points were marked by scissors and each radiated for 30 sec. using a Handylaser (Reimers and Janssen Company and Schwa-Medico Company, both 50 mW continuse- wave- laser, wavelength 820 nm) applied by the owners themselves over a 2 - 3 week period. 38 patients which, before the start of the treatment, had not enjoyed any improvement in stabling or had again been neglected, were kept in these same conditions during the therapy. On the other hand, the conditions of the 25 patients were optimised during the therapy. (see list of patients)

Results

With very many patients (n=79), significant reactions could be observed during the first treatment. An increase in the depth of breathing, sometimes quite significant, was a regular occurrence when the point Bl.17 (influence point of the diaphragm) was treated. This was often accompanied by an increase in coughing. In the meantime it was also noticeable with most of the patients that they took deep breaths a number of times during the acupuncture - something not previously possible because of the obstruction. At the end of a treatment, or 10 minutes thereafter, a loud secretion mobilisation could be heard without the aid of a stethoscope in half of the patients, rather similar to that following a hyperinfusion therapy with frequent swallowing of secretion. After the second or third treatment, in the case of some patients, the previous droning and rattling noises which could be heard by auscultation had completely and spontaneously disappeared. At the end of the therapy the following results had been achieved: 73 horses appeared to

be in a healthy clinical condition, i.e. while resting and in action coughing no longer occurred and also after inhibition of breathing no pathological breathing noises could be ascertained by auscultation. Also the previous emphysema which had been determined by percussion had completely receded, insofar as one could diagnose such by percussion of the lung. The horses were able to be put fully to work again and showed no further cough symptoms. 26 of the 35 patients which underwent a bronchoscopy and which belonged to this group, no longer showed any pathological bronchoscopy results. The next 17 patients no longer had any breathing difficulties and could be put to work normally, but they coughed occasionally in the stable and on starting to work. In 11 patients, the ailments were able to be improved in the end result and the horses put to work again to a certain extent but coughing still persisted at the beginning of, and also sometimes during work so that one was not able to describe their state as satisfactory. 4 horses showed no lasting improvement although positive reactions during treatment were observed also in these patients. Of the 14 horses which were treated daily by their owners for a further 2-3 week period, 9 showed in the end no clinical evidence of disease, 2 were "satisfactory" and 2 horses could be put to work "with limitations". Only one horse still had very serious breathing difficulties following this "intensive treatment" and in the end had to be put down. 1 patient that seemed to be clinically healthy at the end of the treatment, developed a very serious COPD again after only 3 weeks and its owner wanted no further treatment after that. 65 horses were examined again after an observation period of between 6 months and 4 years (average of 1.8 years). All these horses belonged to both of the groups in which a good or very good result was achieved. No worsening in the good condition of 56 of these patients was observed by the owners over the entire period. 3 patients started to develop symptoms again after 6 months, in two patients after a year, in two patients after 3 years and in one patient after 4 years. One patient (No. 97) was brought later into the study being free of symptoms for 10 years following acupuncture treatment of very serious COPD and had now developed once more within a few weeks a similar COPD. However, after 3 further treatments the patient has now enjoyed 1 year complete remission.

Case Studies

These case studies are very interesting and helpful to show the procedure of the controlled acupuncture and to see the connections between the disturbing foci as scars or inapparent sinusitis and allergic reaction.

Case Study No. 1

Eight-year old dark brown Hannoverian mare with back problems and a medium degree COPD.

This patient is not part of the study because of the two problems and the fact that the COPD is only of medium intensity. The patient is, however, extremely suitable for explaining the acupuncture procedure and to demonstrate how it works. The horse's back problem was so extreme that this tournament horse had to be taken out of professional sport and could not even be ridden. The animal reacted to the slightest pressure in the area of the saddle and the kidneys. It also had a medium degree COPD with a

corresponding reduction in stamina. Auscultation findings: distinct droning and rattling noises in the resting state, very clear droning and rattling noises following a lobelin injection. Bronchoscopy findings: abundant viscous mucus in the trachea, slight swelling and reddening of the bifurcation and main bronchi.

Acupuncture of the ear acupuncture points: The lung point (identical to body point Lu7) and the point of the plexus bronchopulmonalis as well as the kidney point showed a distinct symptomatic improvement in the functioning of the lungs in the sense of deeper inspiration and a relieved expiration. The droning noise disappeared. A distinct secretion mobilisation could be heard with the unassisted ear within a few minutes. The treatment of the symptoms of the back points (ear localisations cervical, thoracic and lumbar parts of the spinal column) as well as the thalamus point (identical with the point LI 4) brought no significant improvement on pain palpation. The acupuncture diagnosis detected a disorder in a two-year old badly scarred injury in the right forearm in the neighbourhood of the point Lu6. A two-minute treatment of the scar with the laser was then performed. As a supplement, the thymus point (identical to body point TH 5) was treated with the Fr. 5. Once this therapy was completed, the tenderness had spontaneously disappeared, even on heavy pressure. 5 days after this treatment the old wound, what had been close for several years, had opened up and fistulated. After a total of four laser acupuncture treatments, the back and lungs were without any clinical pathological findings. The horse was able to be put to work again and the fistula had healed.

Case Study No. 2

A nineteen-year old Arabian mare (Patient No. 53) which had been suffering for nine years from COPD and whose condition had so worsened in the previous few years that putting the animal down had been considered a number of times. The horse came to examination in a dramatic state. The breathing frequency was 56 per minute in a resting state with a very serious abdominal expiration. The nostrils were opened up to about palm size on inspiration, the eyes wide open in panic.

Picture 7) COPD- patient with palm- size opened nostrils in inspiration and panic eyes
A loud droning and whistling sound could be heard over a wide area. Percussion showed an extended lung percussion area almost two hands wide and an unusually loud resonance. The following acupuncture points were found and treated: Lu 7, Bl 13, Bl 14, Bl 17, Bl 23, Li 13, CV 17, St 40, Ki 3 and TH 5. An additional disorder in the form of a scar at the point Lu 9 under the carpal joint was discovered by the acupuncture diagnosis. The point Lu 9 is the tonification and source point of the lung meridian and so of extra importance.

During the treatment of this scar with the laser, a deep breathing was heard a number of times and following that, a distinctly easier expiration and an increased inspiration could be ascertained. The breathing frequency was halved to 28 breaths per minute at the end of the first acupuncture treatment and the extreme nostril breathing has disappeared, the eyes had lost the look of panic.

Picture 8) the same patient 25 minutes later, after treatment. You see a relaxed horse with nearly normal nostrils in maximum inspiration.

A bronchoscopy could be made on the following day without risk to the patient. The following symptomatic findings were removed: the entire trachea and the main bronchi were covered in a web of highly viscous secretion filaments. The bronchi collapsed

almost completely on coughing. The bifurcatio tracheae was distinctly swollen and showed an intense inflammatory reddening. The horse was free of symptoms after seven treatments at 3-4 day intervals and could gallop over the fields without trouble.

Picture 9) The same patient 26 days later galloping over the field

Three weeks after the patient was discharged, serious symptoms reappeared and the horse had to be brought in again, despite of a journey of more than 300 miles. A further 6 acupuncture treatments were carried out till the patient could be discharged again, symptom-free. In the observation period of almost a year which followed, the horse was symptom-free according to the owner and had never been in such a healthy state since the start of the illness ten years previously.

Case Study No. 3

A ten-year old Trakehner was brought to acupuncture treatment after years of conventional treatment (Patient No. 54). The horse had not been able to work for the previous six months, despite therapy. An infusion therapy had been carried out three weeks previously (4 days, 40 litre phys. NaCl solution intravenously). Also up to the day of the first acupuncture, the animal had inhaled Pulmicort daily. In addition, the horse had been given an oral dose of Ventipulmin Gel (2 x 20 ml daily, the equivalent of 2x 5mg clenbuterol hydrochloride) and Sputolysin (2 x 35g daily, corresponding to 350mg dembrexin hydrochloride) The findings of the examination were as follows: violent dyspnea in resting, breathing: 36/min., intensely costal breathing with abdominal compression, auscultation: extreme droning and rattling noises over the area of the main bronchi and trachea in resting, percussion: extended lung percussion area the width of a hand with unusually loud resonance, bronchoscopy: larger quantities of highly viscous secretion in the trachea and in the main bronchi, swelling of the bifurcatio trachae. The body temperature was normal, there were no clinical signs of a sinusitis. The acupuncture treatment took place at 2 -3 day intervals and on the points Lu 7, Ki 3, St 40, Bl 14, Bl 17, Bl 23, CV 17, Li 13 and TH 5. The acupuncture diagnosis detected a disorder in the stomach meridian in the area of the point St 1. The point St 1 lies at the root of the first molar tooth in the maxilla or at the sinus maxillaris over this tooth. The first molar of the upper jaw has, interestingly enough, a direct connection with the point Lu 1, the starting point of the lung meridian. The sinus maxillaris and the located point on the first maxillar tooth was treated using a laser area probe (8 x 10Watts imuls- diode over an area of approx. 50 sq. cm.) for two minutes (picture 3). A recognisable deepening of the breathing could be ascertained within 10 minutes following the end of the irradiation. The breathing frequency fell to 28 breaths per minute, the droning noise had become quieter but the secretion rattling noise had become louder. The patient's state improved, when only slightly, in the following days of treatment. The breathing frequency in resting, however, was constant at 20 to 24 breaths per minute so that the owner was quite satisfied with the success of the treatment. As the patient relapsed after each treatment and no distinct reactions to the treatment could be observed, it seemed sensible to break off the therapy. The owner insisted, however, on further treatment and so another treatment was undertaken. The length of treatment with the laser- douche for this area was raised from 2 to 10 minutes as clinically inapparent sinusitis in the area of the left upper 1st molar tooth has a key function in the therapy of this patient. As

exceeding the dose of 1-3 joules/sq.cm. cannot cause any therapeutic damage (KARU et al. 1993), there was no problem in justifying this measure, especially as the energy of 12 joules delivered in 10 minutes was distributed over an area of about 25 sq.cm. No distinct change in breathing could be determined during the acupuncture treatment and the first three minutes of the area treatment which followed. The depth of the breathing increased vehemently from the 4th to the 5th minute reached a state similar to that following an injection of breathing stimulants. The breathing became normal again about 5 minutes after the treatment was discontinued. On the following morning, the horse gave the impression of being free of symptoms for the first time. The breathing was around 8 breaths per minute, was costoabdominal, no droning or rattling sounds could be heard following breathing inhibition. The breathing got worse each time between treatments, at first 20 per minute in resting, then 16 and finally 8 to 12 per minute after a further twelve treatments. A large increase in the depth of the breathing was to be observed during the sinus treatment in the first ten succeeding treatments, although it was weaker from time to time. Even in this case, when an extraordinary large number of treatments had to be made, the effort was still justified as the horse had neither clinical nor endoscopic signs of illness at the end of the treatment and up to today, after a one-year period of observation, the horse has worked, been in very good condition and has returned to professional tournament sport (dressage).

Conclusions

The results show clearly that acupuncture as a vegetative regulating therapy is outstandingly suitable in countering allergic regulatory disorders. This is all the more noteworthy considering that all patients had a very long history of highly chronic illness and in all cases had been treated intensively often over a period of years. The results of this study should help spark the debate as to whether one should look at this form of therapy with less scepticism and greater attention in the future. This is all the more so as it represents, when correctly applied, a substantial enrichment of the whole medical spectrum.

* The *DAA/AM* is a society which exclusively trains doctors, dentists and veterinary surgeons and has over twelve thousand members in Germany alone. It has dedicated itself to scientifically researching the effects of acupuncture, to develop acupuncture further and to understand the physiological mechanisms behind it. The *DAA/AM* directs its aims and endeavours towards a systematic and reproducible diagnosis and therapy in acupuncture.

**controlled acupuncture bases on thr RAC or VAS Reflex. When I near e.g. a laser beam to an active acupuncture point, that means an acupuncture point that is in disorder, the patient reacts with a vegetative reflex. One thing what happens in this reflex is a changed pulse quality, you can taste on the pulse. This has nothing to do with chiniese puls diagnosis and is called „Reflex Auricular Cardinal" or „Vaso Authonom Signal".

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