

Acupuncture and Chinese Herbal Therapy to Resolve Traumatic Facial Paralysis in a Hanoverian Colt

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ABSTRACT

A 12 week old Hanoverian colt was presented following an injury resulting in a fractured dens and atlas and complete left facial paralysis. The colt was unable to nurse and suffered mental depression and secondary problems including keratoconjunctivitis sicca and an oral granuloma from grazing trauma. Two veterinarians recommended euthanasia based on a poor prognosis for recovery. The client elected to pursue evaluation and treatment with Traditional Chinese Veterinary Medicine (TCVM). On the initial TCVM examination he had paralysis of the ear, eyelids, nostril and lip on the left side, a painful swollen neck but was ambulatory and his *Shen* was depressed. His tongue was red-purple and he had strong carotid pulses bilaterally. The TCVM pattern diagnosis was an Excess Heat pattern with focal *Qi* and Blood stagnation to the head and neck. In TCVM, facial paralysis is caused by invasion of Wind Toxin, which leads to local *Qi*-Blood stagnation and paresis or paralysis. The TCVM treatment strategy was to dispel Wind, reduce pain, and move *Qi* and Blood to resolve local stagnation and improve blood flow to the nerves. He received 11 electro-acupuncture treatments and two Chinese herbal formulas Facial P formula (*Jing Tang* herbals) and *Bu Yang Huan Wu* for 30 days. He completely recovered in 4 months.

Keywords: Equine, TCVM, Chinese Herbal Therapy, facial paralysis, electro-acupuncture, acupuncture, Facial-P formula, *Bu Yang Huan Wu*, colt, head trauma, neck fracture

A 12 week old Hanoverian colt was presented for evaluation following a head trauma. The colt was one of three foals in the spring crop and he was being prepared for the annual Hanoverian brand inspection. While being groomed for the event, the colt became agitated and reared repeatedly, lost his balance and flipped over backwards.

The colt landed on the left side of his neck and head. An emergency veterinarian was called for immediate evaluation and radiographs were obtained. A radiology report described two displaced fractures of the left wing of the atlas and a non-displaced fracture of the dens. Spinal cord compression was suspected on plain radiographs as the vertebral canal appeared narrowed.¹ Acupuncture was sought by the client as she thought it might aid in reducing the colt's swelling and pain.

On initial examination, the colt had a significantly swollen poll region and left cervical muscle swelling. He was unable to bend to nurse from his dam, and had audible bone-on-bone grinding in the left atlas region. Paralysis of the left ear, loss of palpebral reflexes medially and laterally, drooping lower lip, upper lip deviated to the right and an inability to retract the tongue on the left side were the findings on neurological examination (Figure 1). He had a positive menace response indicated by retraction of the globe when the hand was advanced toward his eye and a positive response to sensory stimulation from all regions of the face. The conventional diagnosis was facial paralysis due to trauma of the facial nerve (cranial nerve VII) in addition to the aforementioned cervical spinal fractures. The colt was painful upon palpation of the upper neck and poll.

On the Traditional Chinese Veterinary Medicine (TCVM) exam a red tongue and strong pulses were found reflecting the acute inflammation causing Heat to the face and neck. The TCVM pattern diagnosis was an Excess Heat pattern with focal *Qi* and Blood stagnation to the head and neck. In TCVM, facial paralysis is caused by invasion of Wind Toxin, which leads to

local *Qi*-Blood stagnation and paresis or paralysis.² The TCVM treatment strategy was to dispel Wind, reduce pain, and move *Qi* and Blood to resolve local stagnation.

A lengthy conversation with the client ensued about quality of life of the foal and as well as how acupuncture treatment would stimulate the nerves, reduce pain and inflammation and have fewer side effects than non-steroidal anti-inflammatory drugs. The client was warned that complications could occur if the colt were to react negatively to the acupuncture needles, struggle and further injure his neck and spinal cord. The client needed to think about all this, so acupuncture treatment was not pursued at that time. Artificial tears TID in the left eye was prescribed to lubricate the eye and prevent corneal ulceration.

For the next two weeks, the mare was milked and the foal was bucket fed around the clock. He was visibly frustrated at not being able to nurse and his *Shen* began to decline. He became depressed, his haircoat became dull and he spent more time recumbent in his stall. Two other veterinarians recommended euthanasia due to a poor prognosis for recovery.

Due to his decline, the owner decided to try TCVM treatment. Acupuncture was initiated for a minimum of once weekly for 4 weeks, with a trained handler present due to concerns about him reacting adversely and further injuring his neck. At his initial treatment, his tongue was red-purple and he had strong jugular pulses bilaterally. The TCVM pattern remained the same with localized stagnation of the head and neck and Wind toxin invasion causing facial paralysis, but now he had a depressed *Shen*. He remained painful upon palpation over the poll and upper neck, with a visible bulge over the left atlas wing.

The goal of the initial course of acupuncture treatments was to reduce pain, move *Qi* and Blood and dispel Wind. The initial acupoints included combinations of LI-4, BL-10, TH-16, ST-7, BL-1, BL-2, ST-1, TH-23, ST-4, LI-20 and *Bai-hui* (located on the dorsal midline at the lumbosacral junction). Their attributes and indications are outlined in Table 1.^{3,4} Due to the foal's young age, a minimum of 5 and a maximum of 10 acupuncture needles^a were inserted to 0.5 inches deep into the face and limbs and 1 inch deep into the neck.³ Electro-acupuncture (EA) at 80-120 Hz was performed using a standard EA instrument^b for a maximum of 5 minutes per treatment (Figure 2). The treatments included a mix of dry needles and EA. For EA leads were connected between acupoints ST-1 to TH-23, BL-1, or BL-2 for eyelids, ST-4 to ST-7 for lower lip and LI-20 to ST-4 for nose and upper lip. During EA, the eyelids were stimulated to blink and close, signifying evidence of nerve function. After each treatment, the pain previously seen on palpation was diminished or eliminated for 1-3 days. To improve his *Shen*, a fly mask was used to protect his eyes from the sun and flies and he was allowed in a small grass paddock. The plan was to wait until 8-12 weeks post injury to allow the fractures to heal before continuing very aggressive therapy.

At 8 weeks post injury, following 6 short EA treatments, the colt had regained some motor function to the left ear and showed some motor function to the eyelids. However the lower lip still drooped and the left nostril still remained flaccid which impeded full air intake on that side. He allowed gentle movements of the head, poll, and neck without showing evidence of pain. The TCVM signs at this time included a slightly pale, purple tongue, normal left pulse, slightly decreased right pulse. The TCVM diagnosis was resolving local *Qi*/Blood stagnation of the face and neck and resolving Wind toxin and now *Qi* deficiency. The treatment strategy now became to improve mobility of the neck and poll, tonify *Qi* and continue to dispel Wind.

Dry needles were placed at LI-4, LI-20, ST-4, ST-5, ST-6, ST-7, GB-21, GV-26, BL-10, TH-16, SI-16, *Jing-shu* (located at the midpoint of the upper eyelid) and varying *Jiu-wei* points (Classical cervical 9 points: located 1.5 cun caudal to BL-10 and 3.5 cm ventral to the mane, and ending at 3 cun cranial to TH-15 and 5 cm ventral to the mane. The other 7 points are equidistant between the most cranial and caudal points).⁴ Dry needles and EA were used as previously. Points again varied and EA connection patterns were similar to the initial treatments, connecting leads across the eyelids, nose and upper and lower lips. Leads were also connected between GB-21 and either BL 10 or TH-16, or between upper and lower *Jiu-Wei* points to aid in relieving neck

muscle tightness and to stimulate this region. At this time, the eyelids were 80% responsive immediately post-treatment, and continued to regain full function. EA was increased to 15 minutes-20 minutes. Treatment remained the same with some variation in facial points, once weekly for 2 treatments.

The colt was turned out to pasture with other young horses at 9 weeks after the injury. At this time he began to develop a large, 3 cm oral granulomatous mass on the rostral left mandible from his inability to protect his mouth with his left lower lip (Figure 3). The motor function of the left eyelid and ear were almost normal at this time (Figure 4). GV-26, CV-24 and *Fen-shui* (classical acupoint located at the center of the vortex pilus of the upper lip) were added for their local effects.^{3,4} Dry needles were placed in the same acupoints as in all prior treatments. EA was continued, with leads connected between GV-26 or Fen-shui and LI-20 and between CV-24 and ST-4, but there was little motor response in the nostril or lower lip. It was suspected that this was because the branches of facial nerve innervating the nose and lip were farther from the injury site and so would recover last. The nose and lips now became the focal point of treatment, but there was a lack of twitch response to EA.

Chinese Herbal Therapy was initiated to complement the EA and to try to resolve the remaining stagnation and paralysis. The Chinese Herbal formulas Facial P formula^b and *Bu Yang Huan Wu*^c were selected (Tables 2 and 3).² Both herbal formulas were prescribed at 15g BID in a powder form to be top-dressed on the feed for a minimum of 30 days. These herbal formulas were chosen for their specificity to resolve facial paralysis, and to tonify *Qi* and nourish Blood.

By 4 months after his initial injury, after his 10th acupuncture treatment and 7 days after initiating herbal medicine, the colt regained complete facial function and the lower lip was elevated and touched the upper lip. Although some Chinese herbal medicines are often estimated to take 2-4 weeks to have a therapeutic effect, the herbal treatment in this case seemed to rapidly resolve the remaining clinical signs.² Only mild upper lip deviation to the right remained and his nostril function was normal and his breathing was unhindered (Figure 5). Once he was on pasture full time, his oral granuloma healed completely as he was able toprehend normally. Herbal medicines were discontinued after 30 days.

Moving of the head and neck with carrot-induced stretching and massage were provided to improve range of motion and muscle flexibility. Maintenance acupuncture treatments were continued once monthly as needed for an additional 3 months, though the colt was functionally normal at 4 months post injury, after 11 total acupuncture treatments and 30 days of Chinese Herbal Medicine. In the spring of 2008, the colt passed his brand inspection and was branded and registered with the Hanoverian verband.

One mechanism by which EA may improve recovery from traumatic injuries is the effect on local blood circulation. In a recent study, EA increased sciatic nerve blood flow in the cauda equina, nerve roots and sciatic nerve in rats as measured with laser-Doppler flowmetry.⁵ There are also many case studies demonstrating the use of Chinese herbs and acupuncture with conventional medicine for the resolution of facial nerve paralysis in humans.⁶ The same acupuncture points used for the colt in this case report were used in humans to resolve facial paralysis with a significantly better effect than dextran, prednisone, and oryzanol.⁷ In companion animals, acupuncture has been used to successfully treat facial nerve paralysis in a dog.⁸

This case demonstrates the use of TCVM treatment with veterinary acupuncture and Chinese Herbal Therapy to assist the recovery of a colt that was going to be euthanized because of his injuries. Within 4 months of initiating TCVM treatment, the colt was recovered. The effects of acupuncture on nerve stimulation and regeneration most likely enhanced the recovery from the facial nerve injury by increasing circulation, stimulating muscle and neural pathways and releasing endorphins to manage pain. As well, the close veterinarian-patient-client bond allowed for consistent patient monitoring and TCVM treatment strategy adjustments as well as providing emotional and physical support for both the animal and client.

The Merck Veterinary Manual states “Trauma is a common cause of facial paralysis in all species...There is no specific therapy for injury except massage and heat of denervated muscles for 15 minutes 2-3 times daily. The facial nerve can regenerate 1-4 mm per day, so serial neurologic examinations can also help determine the prognosis. If there has been no improvement after 6 months, the chance for recovery is poor. Horses with collapsing nostrils may require corrective surgery.”⁹ Basic husbandry and invasive surgery are listed as the only options for treatment and with a guarded prognosis.

Some horses with traumatic facial paralysis may resolve with no treatment in 1-10 days, but a poor prognosis is often given for animals with neurologic dysfunctions lasting for more than 2 weeks.¹⁰ In a study of equine patients with traumatic facial paralysis, patients required an average of only 13 AP treatments for full resolution of signs, regardless of the degree of severity.¹¹ In the colt in this report, complete recovery was seen after 11 treatments. Acupuncture and herbal therapy provided a non-invasive, beneficial therapy that ultimately saved this colt’s life and gave him a chance at a fulfilling performance career. TCVM should be considered as a primary treatment modality in cases involving nerve trauma and paralysis.

- a. Needles used: Kingli ½”x 28g stainless steel; Acu-Tek 1”x 28g stainless steel
- b. WQ6F, Donghua Electronic Instrument Factory, Beijing, China.
- c. Jing Tang Herbal, www.tcvmherbal.com

All photographs were obtained by the author and used with the client’s permission

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Table 1: Acupuncture Points Used in the Treatment of Facial paralysis in the Colt

Acupoint	Indications or Attributes
LI-4	Master point face and head
LI-20	Local point for facial paralysis
ST-4	Local point for facial paralysis
ST-5	Local point for facial paralysis
ST-6	Local point for facial paralysis
ST-7	Local point for facial paralysis
GV 26	Local point for facial paralysis
CV 24	Local point for facial paralysis
TH-23	Eye problems, local point for facial paralysis
GB-21	Shoulder pain, used as a grounding point
<i>Fen- shui</i>	Local point for facial paralysis
<i>Jing-shu</i>	Eye problems, local point for facial paralysis
BL-10	Calming, local point for cervical stiffness
Circle the Dragon	Points surrounding atlas fractures left side
<i>Jiu-wei</i>	Cervical 9 points for neck stiffness
LU-7	Master Point Head and Neck
<i>Bai-hui</i>	<i>Qi</i> point

Table 2: Ingredients in the Chinese Herbal Formula Facial P formula*

<i>Pin Yin Name</i>	English Name	Actions
<i>Chai Hu</i>	Bupleurum	Soothe Liver <i>Qi</i> , clear Wind toxin
<i>Chi Shao Yao</i>	Peony	Relieve pain and cool Blood
<i>Chuan Xiong</i>	Ligusticum	Relieve pain and activate Blood
<i>Dang Gui</i>	Angelica	Activate Blood, resolve stagnation and relieve pain
<i>Gan Cao</i>	Licorice	Harmonize
<i>Hong Hua</i>	Carthamus	Break down Blood stasis, relieve pain
<i>Huang Qi</i>	Astragalus	Tonify <i>Qi</i>
<i>Sheng Di Huang</i>	Rehmannia	Nourish <i>Yin</i> and clear Heat
<i>Tao Ren</i>	Persica	Break down Blood stasis, relieve pain

*Jing Tang Herbal. www.tcvm.com

Table 3: Ingredients in the Chinese Herbal Formula *Bu Yang Huan Wu*

<i>Pin Yin Name</i>	English Name	Actions
<i>Bai Shao Yao</i>	Peony	Nourish Blood and <i>Yin</i> , soothe Liver <i>Yang</i>
<i>Chuan Xiong</i>	Ligusticum	Activate Blood and relieve pain
<i>Dang Gui</i>	Angelica	Nourish Blood
<i>Di Long</i>	Lumbricus	Break Blood stagnation
<i>Hong Hua</i>	Carthamus	Break stasis and relieve pain

<i>Huang Qi</i>	Astragalus	Warm and tonify <i>Qi</i>
<i>Tao Ren</i>	Persica	Break stasis and relieve pain

Figure Legends

1. **Figure 1:** The initial lack of palpebral reflex of the Hanoverian colt following the trauma facial nerve injury
2. **Figure 2:** Electro-acupuncture was begun, 2 weeks after facial nerve trauma
3. **Figure 3:** A persistent drooping lower lip and development of large gingival granuloma, 9 weeks after the facial nerve trauma
4. **Figure 4:** The return of the left palpebral reflex and motor function of the left ear, 9 weeks after the facial nerve trauma
5. **Figure 5:** Complete return of function to the left eye, ear and lower lip with slight upper lip deviation 4.5 months after the traumatic facial nerve injury
6. **Figure 6:** Yearling photo of the Hanoverian colt out to pasture to play and grow



Fig 1



Fig 2

Fig 3



Fig 4



Fig 5



Fig 6

