

CASE REPORT – USE OF ACUPUNCTURE FOR THE TREATMENT OF CONCURRENT HYPOADRENOCORTISM, URINARY INCONTINENCE AND EPILEPTIC RELATED COMPLAINTS IN AN ADULT DOG.

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ABSTRACT:

An adult dog was presented with concurrent Hypoadrenocortism, Urinary Incontinence and Epilepsy. Although stable on western treatment for several years, related complaints had not completely responded. These included seizures, muscle tremors and incontinence.

Acupuncture treatment based on a Traditional Chinese Medicine (TCM) was used to assist treatment and improve quality of life.

HISTORY:

Sass, a nine year old female neutered German Short Hair Pointer, was presented on 26/7/04 with concurrent Hypoadrenocortism and Epilepsy.

At one year of age she was hit by a car on the left side of the head. She was concussed for several hours and with conventional treatment made an uneventful recovery.

At three years of age she was seen eating paint stripper and wood shavings. Sass developed signs of gastroenteritis and again with conventional medicine returned to full health.

Fourteen months after the poisoning at four and a half years of age she gradually showed signs and was diagnosed with Chronic Primary Hypoadrenocortism. Medications of fludrocortisone and prednisolone stabilised her condition, though both urinary incontinence and seizures started during her recovery. Once her electrolytes and medication for Hypoadrenocortism stabilised, the seizures and urinary incontinence initially subsided.

Over the years blood tests have shown the electrolytes to be within normal limits and the Hypoadrenocortism to be under good control (Table 1), however both the seizures and urinary incontinence have steadily become worse. In November 2003 the seizures became larger and developed into clusters. She was started on phenobarbitone and again the seizures subsided. Yet from April to July 2004 small fits had returned with muscle tremors and urinary incontinence occurring daily.

TCM HISTORY:

Further history from the owner revealed Sass to feel the heat and all her symptoms are worse during the warmer periods. She constantly stayed in cooler areas, especially cold tiles, and shivered while lying on them. If the owner called her away she would return as soon as possible to the tiles and look miserable and depressed.

Some nights she paced and left sweaty paw prints. This occurred earlier on after first being diagnosed with Hypoadrenocortism, but this still occurred periodically and especially during the nights prior to seizures.

Her thirst was normal. But her appetite had increased since the start of phenobarbitone.

The urinary incontinence was noticed more at nights where she was lying for the longest, but it also occurred during the day. (She was also sterilised after her first season).

The seizures start with her left Temporalis muscle ‘swelling’ and twitching, then spread over her head predominantly on the left side, and down the left side of her neck. The later more intense seizures spread to her front legs and she vocalised. She did not foam or salivate, had no pre or post-ictal phases, and remains conscious throughout the episodes. The muscle tremors that occurred daily are predominantly over her left shoulder and left chest. These seizures and muscle tremors were better with regular exercise, but worse with the owners emotional states such as anger and excitement.

EXAMINATION:

Sass was in good body weight and condition and very bright and alert. Lung and heart sounds were clear on auscultation and temperature was normal. She showed greying around the muzzle and her coat was longer in length, dull and sparse. Her eyes had a slightly dry appearance with mucous in both medial canthus, and her extremities and ears were icy cold to touch.

Constitution; Sass is a Wood type. Although she has to be centre of attention, she is also very independent. She is very wilful and loves to “live life on the edge”. The owner best describes Sass as “knowing her commands very well, but chooses to ignore them”.

Pulse; Rapid and Wiry. Deficiency Liver and Spleen

Tongue; Pink, thin white coat

Smells; Genitals – rancid
Breath – putrid

Alarm points; No alarm points

Associated Effect points; BL 18, BL 23

DIAGNOSIS:

Western; Hypoadrenocortism
Idiopathic Epilepsy
Urinary Incontinence

Eastern; Kidney Jing Deficiency
Kidney and Liver Yin Deficiency, allowing
Liver Yang Rising, causing Interior Wind
Liver Qi Stagnation

TREATMENT PRINCIPLES:

Tonify Kidney Jing
Tonify Kidney and Liver Yin
Subdue Liver Yang
Disperse the Liver and regulate Qi

POINTS USED:

Combination of the following points was used over an eight month period.
KI 3, LIV 3, SP 6, BL 23, BL18, GV 16, GB 20, BL 22, GB 14.

Method; Reinforced points to tonify Kidney and Liver Yin; KI 3, SP 6
Reduced points to subdue Liver Yang and to disperse and regulate Liver Qi;
LIV 3, GB 20, GV 16, GB 14
Even method on Associated Effect points to harmonise corresponding organs;
BL 18, BL 22, BL 23
Moxa contra-indicated and not used.

Needles; Seirin No. 1 (0.16) x 15mm for points on the extremities
Seirin No. 3 (0.20) x 30mm for points on the body

Sessions; Four treatments one week apart, using KI 3, LIV 3, SP 6, BL 23, BL 18, GV 16, GB 20.
Then 2 treatments 2 weeks apart, followed by treatments every 6 weeks, using KI3, LIV 3, GB 20, GV 16, BL 18, BL 23, BL22, GB 14.

Points¹;

TAIXI **KI 3** Greater Stream

Location: In the depression between the medial malleolus and tendo-calcaneus, level with the tip of the medial malleolus

Nature: Stream, Earth, and Yuan point

Action: Tonify Kidney Yin and Yang
Benefits Jing
Anchors Qi

Clinical Use: Source point for the Kidneys, the foundation of all the Original Qi of the body and Jing, the substrate of life. Tonifies Kidney Yin and Yang. As the Kidney stores Jing, this point can tonify Jing, the bones and the Marrow which includes the brain and spinal cord.

TAICHONG **LIV 3** Bigger Rushing

Location: On the medial aspect of the second toe, distal to the tarso-metatarsal joint on the anterior-medial aspect of the metatarsal II

Nature: Stream, Earth, and Yuan point

Action: Promotes smooth flow of Liver Qi
Subdues Liver Yang and expels interior Wind
Nourishes Liver Blood and Liver Yin
Clears the head and eyes
Calms Mind

Regulates Lower Heater

Clinical Use: Sedates the Liver in excess pattern, especially Liver Yang. Expel interior Wind and calms muscle spasms, contractions and cramps. Regulates Liver Qi, nourishes Liver Blood and Liver Yin thus calming anger.

SANYINJIAO SP 6 Three Yin Meeting

Location: 3 cun above tip of medial malleolus, on posterior border of tibia.

Nature: Group Luo point of three Yin of the (hind) leg

Action: Tonify Spleen and Kidney

Promotes function of Liver and smooth flow of Liver Qi

Resolves Damp

Nourishes Blood and Yin

Harmonises Lower Jiao - Regulates urination, uterus and genitals

Moves Blood and eliminates stasis

Cools Blood

Calms Mind

Clinical Use: Tonifies the Spleen and Kidneys and ensures smooth flow of Liver Qi, aiding gastrointestinal, reproductive and skin disorders and calming the Mind. Nourishes Blood and Yin, removes stasis of Blood and Dampness especially in Lower Burner, and harmonises the Lower Jiao, thereby aiding incontinence.

GAN SHU BL 18 Liver's Hollow

Location: 1.5 cun lateral to the spinous process of the 9th thoracic vertebrae.

Nature: Associated Effect Point of the Liver

Action: Regulates Liver Yang, Liver Qi, and Liver Blood

Resolves Damp Heat

Benefits eyes

Eliminates Wind

Clinical Use: Being the Associated Effect Point for the Liver, this point is useful for most Liver patterns. In particular, stagnation of Liver Qi or retention of Damp Heat in Liver and Gall Bladder benefits. When reinforced, assists in deficient Liver Blood. When reduced, subdues interior Wind. Promotes vision, especially night and blurred vision, and red painful and swollen eyes.

SAN JIAO SHU BL 22 Triple Burner's Hollow

Location: 1.5 cun lateral to the caudal border of transverse process of L1 vertebrae

Nature: Associated Effect Point of Triple Heater

Action: Regulates Water passages

Regulates transformation of fluids in the Lower Burner

Resolves Dampness and 'masses'

Regulates Spleen, Stomach and Triple Heater

Clinical Use: Stimulates the transformation and transportation of fluids in the Lower Burner, thereby resolving Dampness and promoting urination. In relation to its proximity to the adrenal glands BL 22 can also be useful in endocrine disorders.

SHEN SHU BL 23 Kidney's Hollow

Location: 1.5 cun lateral to the caudal border of transverse process of L2 vertebrae

Nature: Associated Effect Point of Kidney
 Action: Tonify Kidney and nourishes the Kidney Jing
 Regulates the Water passages
 Resolves Dampness
 Strengthen Kidney function of reception of Qi
 Benefits the eyes and ears
 Clinical Use: Tonify Kidney deficiency. Being on the back it is slightly better for Kidney Yang, but also tonifies Kidney Yin.
 Nourishes Kidney Jing and thus benefits bones, Marrow, Mind, will power and symptoms of aging.
 Important role in Blood production
 Regulates Water passages and assists to remove Dampness from Lower Burner for urinary complaints
 Supports Kidney Yin nourishment to moisten the eyes and promote good sight.

FENGFU **GV 16** Wind Palace
 Location: In the dorsal midline, posterior to occipital protuberance in the depression above the foramen magnum
 Nature: Point of Sea of Marrow
 Action: Eliminates Wind
 Benefits the brain
 Clears the Mind
 Clinical Use: Eliminates both external and internal Wind, therefore used for exterior attacks and internal strokes, epilepsy or severe giddiness.
 Influences the Sea of Marrow which fills the brain, therefore clears the Mind and stimulate the brain.

FENGCHI **GB 20** Wind Pond
 Location: On the back of the head, below the occipital bone, in the depression between the upper portion of the sternocleidomastoideus and trapezius muscle
 Nature: Meeting point with Triple Heater meridian
 Action: Eliminates Wind
 Subdues Liver Yang
 Benefits eyes and ears
 Clears Heat
 Clears the brain
 Clinical Use: Eliminates interior and exterior Wind. It is used for dizziness, vertigo and occipital headaches from internal Wind or from Liver Yang rising or Liver Fire.
 Tonifies Marrow and nourishes the brain, thereby used for deficiency of the Sea of Marrow such as poor memory, dizziness and vertigo.

YANGBAI **GB 14** Yang White
 Location: In the depression midway between the zygomatic process of frontal bone and midline of the skull
 Nature: Meeting point of Stomach, Triple Heater and Large Intestine meridians
 Action: Eliminates Wind
 Subdues rising Qi

Benefits head and alleviates pain

Benefits the eyes

Clinical Use: Eliminates exterior Wind, especially that for facial paralysis and unilateral frontal headaches on the Gall Bladder meridian.

This point was chosen for the location to the primary source of the seizures and to subdue the rising Qi.

RESULTS:

- 26/7/04; First session. Little anxious throughout treatment.
- 2/8/04; For the first three nights after the initial session Sass seeked warmth rather than the cold tiles. She had several seizures and was very urinary incontinent during the seizures on the 31/7/04.
- 9/8/04; Sass only seeked warmth for one night after the last treatment, but only had one smaller fit yesterday, whereby normally she would have a few cluster fits. This week she has not been as “in your face” as normal, being more grounded. She was much calmer to needle and more relaxed.
- 16/8/04; Sass is now seeking warmth most of time. Her legs are warmer to touch. But the muscle tremors have continued most of the week in the evenings and small fits two days ago. The night before the seizures she paced the house.
- 30/8/04; No urinary incontinence noticed for 3 weeks. Tremors occurring more frequently at night, with her teeth chattering and icy cold extremities. Left front foot and hind right foot cold, right front foot and hind left foot warm. Changed points, and now including GB 14, and BL 22. Very reactive to GB 14 being needled, very anxious. Left GB 14 needle worked its way in deeper during the session instead of releasing.
- 13/9/04; Much better last 2 weeks. Only one small fit in 2 weeks and only noticed tremors once or twice. Always seeking warmth now, extremities always warm. Incontinence occurred only once during the one seizure.
- 17/10/04; Only one very small fit in the last 4-5 weeks, which was over before the owner had a chance to watch. Tremors and urinary incontinence completely gone. Much calmer with emotions, and does not demand attention. Not seeking the cold tiles even though the weather is warming up. Started to sleep during the acupuncture session for the first time. Only glanced up when needled GB 14, and peacefully slept after the needles were removed.
- 29/11/04; Owner saw one very small tremor last night. Otherwise been very well.
- 17/01/05; Owner been on holidays for 3 weeks. Small seizures the next day. Most likely due to excitement with the owners return.
- 7/03/05; Maintained very well last 6 weeks. Last week very hot period and one day of small fits during this. All other symptoms resolved except her coat. This is shinier than previously but the long sparse hairs have remained unchanged.

DISCUSSION:

Sass was diagnosed with three main Western conditions; Hypoadrenocortism, Idiopathic Epilepsy, and Urinary Incontinence.

Hypoadrenocortism is an endocrine disorder due to diminished mineralocorticoids and glucocorticoids secretion by the adrenal glands. The common median age for onset in dogs is 4 years and females tend to be more at risk². The aetiology includes idiopathic, immune-mediated, mitotane overdose, granulomatous disease and metastatic tumours². In Sass's situation the cause is idiopathic but other causes including immune-mediated disease, and the poisoning fourteen months earlier can not be excluded. Daily oral hormonal replacement of fludrocortisone and prednisolone has been used for maintenance therapy.

Seizures are a clinical manifestation of abnormal neuronal hyperactivity involving the cerebral cortical neurons. The clinical appearance of the seizure depends on the extent and location of the lesion. Extracranial causes include metabolic disorders of hypoglycaemia, hypocalcaemia, renal failure, hepatic encephalopathy or toxins. Intracranial causes include degenerative diseases, structural abnormalities, neoplasia, inflammatory/infectious diseases, immune mediated or idiopathic³. In this incidence a combination of two causes could be leading to her seizures. Firstly the trauma from the car accident could have led to an intracranial bleed or damage to neurons such as post-traumatic glial scar. Secondly during Sass's recovery from her Hypoadrenocortism crisis, the glucocorticoid dosage was high. Glucocorticoids lower the firing threshold of neurons⁴ and combining this with the imbalance of electrolytes could also lead to neuronal hyperactivity. No MRI scans of the brain were done due to the cost, so any intracranial lesions can not be identified, and her electrolytes have been stable for many years with a reduced amount of glucocorticoids administered. Therefore her seizures are classed as Idiopathic Epilepsy, the cause being unknown. Control is with phenobarbitone, a long acting barbiturate with sedative, hypnotic and anticonvulsant properties.

Urinary incontinence is a disorder of storage phase of micturition. It can result from a failure of the urinary bladder to accommodate urine, urinary bladder over distension leading to overflow, a failure of the urethral continence mechanism or anatomical bypass of the urinary storage structures. The many causes include neurological disruption, infection, inflammation, infiltrative neoplasia, congenital abnormalities, hormonal responsive incontinence and polyuria⁵. Again the high dose of glucocorticoids in the early stages of recovery was suspected to be the cause through polydipsia and polyuria. The lowered dose of glucocorticoids and subsequently normal quantity of urination failed to resolve the urinary incontinence. Hormonal responsive incontinence may have played a role, however no hormonal trials were carried out.

TCM DISCUSSION:

In Chinese medicine there is an importance of how people conduct their lives. Ideally the Taoist philosophy is to live in harmony with nature. If this is achieved, then the person will have an inner harmony. Yin and Yang will be balanced, Qi will flow smoothly and the person will be healthy, physically and mentally⁶. Sass's unfortunate past and lifestyle has depleted her health at an early age.

The car accident at one year of age was the first impact on her well being. The fact that the source of the seizures in the Temporalis muscle is the same point where the head injury occurred indicates deep pathology present. Chinese medicine understands that trauma can lead to both scarring at the site and pain being stored subconsciously. Scars can obstruct the flow of Qi in the meridians that they cross and can be an area where pathogenic factors lodge⁷, ie in this case Wind which has arisen at a later date.

The consumption of poison at three years of age and Hypoadrenocortism at four years of age were her second and third impact on her well being. The evidence of the detrimental influence on her Kidney Jing include signs of early and significant greying around the muzzle. Despite being on replacement medication her depleted Kidney Yin showed clinical signs of internal heat, urinary incontinence, putrid breath, and pacing at night. The deficient Kidney Yin pattern precedes a lack of body fluids and the arousal of Empty-Heat within the Kidneys⁸. This has led to Sass's clinical signs of 5 Palm Heat, night sweating (sweaty paws) and a Rapid pulse.

With the body failing to hold Defensive Qi in at night (Defensive Qi retires to the Yin at night) so Yin fluids come out with night sweating⁸. The owner notes that the night restlessness and sweaty paw prints often takes place prior to the days of seizure activity. Thus the loss of Yin fluids is a key factor in her following seizures and TCM pattern.

By the Sheng cycle, the deficient Kidney Yin has failed to produce fluids or substance to nourish the Liver. While the Kidney Jing has an important role in Blood formation. Liver Blood is a part of Liver Yin. Therefore Liver Yin requires the nourishment from both Kidney Yin fluids and the Kidney Jing blood formation⁹. Sass displays signs of both Kidney and Liver Yin deficiency as they are entwined in chronic conditions. The dry eyes are a symptom of Liver Yin deficiency, due to the Yin of Liver being unable to moisten the eyes.

Subsequently the Liver Yin deficiency has then allowed Liver Yang to rise and cause internal Wind. Liver Yang rising is mostly diagnosed as unilateral head symptoms. In excess conditions Liver Yang is predominantly right sided, and left sided in deficient conditions¹⁰. In this situation the symptoms on the left side are due to the previous scar where the Wind has lodged. The Liver Yang rising is also characterised by the lack of pre or post ictal phases, susceptibility to emotions, staying conscious, and the lack of foam or Damp in the mouth.

Sass's TCM pattern also has the addition of Liver Qi Stagnation. She has emotional changes which including being depressed and quiet, susceptible to anger, cold extremities with internal Empty-Heat, and a Wiry pulse. Emotional problems are by far the most important if not only cause of Liver Qi Stagnation. Frustration, repressed anger, or resentment over a long period of time can cause circulation to become impeded so that Qi does not flow smoothly¹¹.

In treating Sass no attempt was made to reduce her medication (Table 2). However Eastern acupuncture was then employed to relieve symptoms by tonifying Kidney Jing, Kidney and Liver Yin, subdue Liver Yang to calm internal Wind, and disperse the Liver and regulate Qi.

The initial treatments showed a good response. It successfully aided in the nourishment of Kidney and Liver Yin. The urinary incontinence ceased, her eyes where brighter and more lubricated, and her breath smell improved. Her Blood also was nourished and Liver Qi dispersed. This had a calming action on the Mind, her excess personality settled, her extremities became warmer, and she could regulate her body temperature better. But the early

acupuncture sessions failed to treat the scar tissue at the root of the seizures.

Ideally scar tissue should be treated in the first treatment. This benefits the flow of Qi in the meridians that they cross and resolves stagnation. Initially I believed that this was not possible due to its assumed location intracranial. But with the failure to resolve the seizures while other clinical signs improved led to a change of the points needled. The key point needled in the following sessions was GB 14, with its position in the Temporalis muscle over the trauma area. Although pain was not palpable over this muscle, the reaction to needling this point was highly notable. She became very anxious, vocalised, where needling elsewhere has not caused any concern. Interestingly when needling GB 14, the left needle would migrate into the muscle during the treatment, while the other needles would slowly release. Again this suggests some deeper pathology present. Both of these reactions settled over the next few sessions.

It was from this session onwards where the seizures settled dramatically, the tremors in her left shoulder and chest completely resolved, her emotions settled to being extremely calm, and she started relaxing and enjoying her treatments. For several months, to the date of writing, Sass's seizures have almost been completely resolved. The only exception being one day of extreme heat, and one weekend of excitement after the owner returned from holidays.

Her coat remained the only clinical sign unchanged. Although there was more shine due to the Blood nourishment, the longer dull sparser coat is typical of a corticosteroid pattern relating to the prednisolone use, and this was unlikely to respond to acupuncture alone without reduction of the oral source.

CONCLUSION:

There was no expectation in this case to cure Sass of Hypoadrenocortism. If there is no functional tissue remaining in her adrenal glands then there is no capacity to regenerate and Sass is now dependent on an outside source of adrenal hormones. Therefore her current medication was never reduced.

However the side effects arisen from her illnesses have been responsive to TCM. Overall she was calmer, happier, regulated her body temperature better, improved breath smell, cleared her eyes, had no urinary incontinence, her muscle tremors resolved and the seizures almost completely subsided.

Therefore side effects from Hypoadrenocortism as well as Urinary Incontinence and Epilepsy can benefit from acupuncture with concurrent western medication. Although these points will be able to use for other similar cases, the nature of this case was very individualised. It would be unlikely to find another the same, and other patients should have point selection tailored to suit their TCM pattern.

TABLES:

TABLE 1. Blood Tests

	Na mmol/L (144-154)	K mmol/L (3.8-5.8)	Cl mmol/L (93-121)	Na:K ratio >25:1	Phenobarb mol/L (65 – 150)
9/04/99	129	5.3	93	24.34:1	
27/05/99	139	5.6	107	24.8:1	
2/07/99	141	5.5	104	25:1	
8/12/01	151.6	5.58	115.3	27.2:1	
11/11/03	143.9	5.3	108.5	27.15:1	Started on phenobarb
2/08/04					100

9/4/99; ACTH stimulation test; pre and post ACTH Cortisol <28 nmol/L (75 – 250).

TABLE 2. Current Medication

Fludrocortisone acetate	Prednisolone	Phenobarbitone
350 µg twice daily	2.5 mg alternative days	90 mg twice daily

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