

Case Report

Acupuncture treatment for idiopathic Horner's syndrome in a dog

Sung-Jin Cho^{1,3}, Okjin Kim^{1,2,*}

¹Animal Disease Research Unit, College of Life Science and Natural Resources, and

²Center for Animal Resources Development, Wonkwang University, Iksan 570-749, Korea

³Family Animal Clinic, Gunsan 573-351, Korea

A one-year-old female English Cocker Spaniel dog with idiopathic Horner's Syndrome is described. The specific clinical signs in this specimen were miosis, ptosis, enophthalmos, and prolapsed nictitans for 2 days following sudden onset. According to history taking, ophthalmic, neurological, and radiological examination, the patient was diagnosed with idiopathic Horner's syndrome. Manual acupuncture treatment was applied to the dog on local points two times in 2 days. The local acupoints were ST-4 (Di Chang) and GB-1 (Tong Zi Liao). The day after the initial acupuncture treatment, clinical signs related to idiopathic Horner's syndrome had almost disappeared. The day after the second treatment, specific clinical signs were completely absent. During this period, the dog did not receive any orthodox treatment. Thus, it is suggested that manual acupuncture might be an effective therapy for idiopathic Horner's syndrome.

Keywords: acupuncture, dog, Horner's syndrome, Oriental medicine

Horner's syndrome is an oculosympathetic dysfunction that results from disruption of the sympathetic innervations to the eye and adnexa. Thus, ophthalmologic signs are usually noted. Ptosis, miosis, and enophthalmos are the three main ocular signs of Horner's syndrome in human medicine [2,10]. This condition may be caused by neoplasms, cysts, inflammation, injury, or unknown causes [2,9]. In veterinary medicine, the cardinal signs of Horner's syndrome are miosis, ptosis, enophthalmos, and prolapsed nictitans [3,6]. The important causes of Horner's syndrome in dogs and cats were found to be trauma and optic problems, but the etiology could not be determined in 50% of all cases [6,11]. Most cases of idiopathic Horner's

syndrome are resolved spontaneously in 4 to 8 weeks or more [3,6, 11], but an effective treatment method has never been introduced. This report describes the effect of needle acupuncture (AP) therapy for idiopathic Horner's syndrome in a dog.

A one-year-old female English Cocker Spaniel was brought to our clinic. The chief complaint was drooping of the left side upper eyelid and protrusion of the third eyelid (Fig. 1). The patient had no history of trauma, and this eyelid sign had presented acutely 2 days prior to the visit, with a sudden onset and no further progression. The client informed us that the patient did not appear to experience any circling, ataxia, or pain. On physical examination, the clinical signs were limited to ipsilateral left side ptosis, miosis, enophthalmos, and prolapsed nictitans; the dog was alert during the examination. Other signs were not found after neurological and otoscopic examination, and complete blood counts, serum protein, and urine analysis were normal. The radiological examination showed no evidence of external trauma or other radiographic problems. A pharmacological test to locate the cause of Horner's syndrome was not performed due to client rejection. According to history, physical, neurological, and radiological examination, the patient was tentatively diagnosed with idiopathic Horner's syndrome.

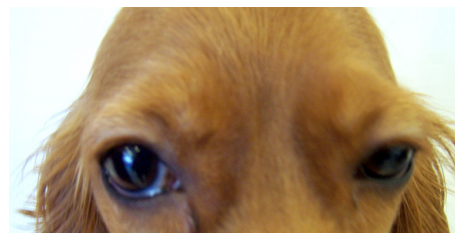


Fig. 1. Horner's syndrome in an English Cocker Spaniel. The dog showed drooping of the left side upper eyelid and protrusion of the third eyelid.

*Corresponding author

Tel: +82-63-850-6668; Fax: +82-63-850-7308

E-mail: kimoj@wonkwang.ac.kr

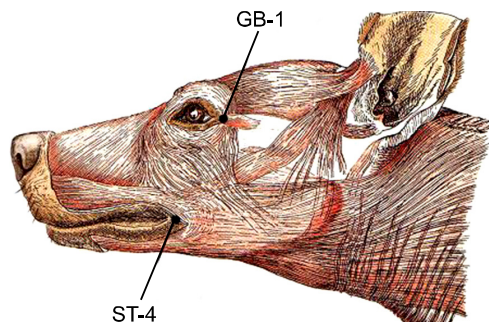


Fig. 2. Acupoints, GB-1 and ST-4, used for idiopathic Horner's syndrome in the dog.

Because the owner of the dog wanted to try traditional Oriental therapy, needle-AP treatment was performed. Electrical stimulation (electroacupuncture) was not used. ST-4 (Di Chang) and GB-1 (Tong Zi Liao) were selected as local acupoints (Fig. 2).

In this study, the selected ST-4 and GB-1 are acupoints of the Foot-Yang meridian. ST-4 is the fourth acupoint of the Stomach meridian. Di Chang means 'storehouse of food from the earth'. The location of ST-4 is at the lateral corner of the mouth. GB-1 is the first acupoint of the Gallbladder meridian. Tong Zi Liao means 'fossa of bone near the pupil'. GB-1 is located at the lateral corner of the lateral canthus. The ST-4 and GB-1 are local acupoints that are used for treating facial paralysis in human Oriental medicine [14,16].

These acupoints were treated bilaterally at each point with a filiform stainless-steel needle (AP needle No. 263; Dong Bang, Korea). The angle of needle insertion was 10 to 20 degrees, with horizontal insertion. During the treatment, the needling stimulation and manipulation consisted of simple insertion without lifting, thrusting, twirling, or rotating. The needles were retained for 20 min. The day after the first AP treatment, ptosis, enophthalmos, and miosis were significantly alleviated. Moreover, the prolapsed nictitans had completely recovered. A second AP treatment was performed using the same techniques. On the third day of examination, all of the clinical signs had disappeared (Fig. 3). The dog was completely cured by took daily AP treatment for only 2 days. During this period, the dog did not receive any orthodox treatment. On a follow-up visit 1 week after the last therapy, no clinical syndromes were observed.

In Western human medicine, Horner's syndrome is commonly known as a neuro-ophthalmologic disease characterized by the loss of sympathetic tone in the eye [9,10]. Horner's syndrome affects patients, who show specific clinical signs, including ptosis, miosis, enophthalmos, and third eyelid protrusion [6,13]. In the present case, these specific signs were observed on the ipsilateral left

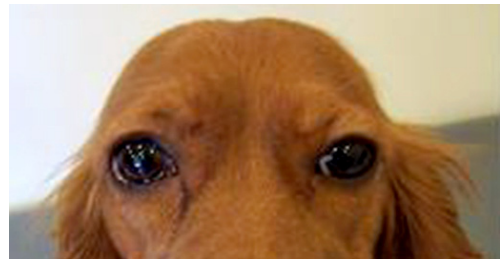


Fig. 3. Unilateral idiopathic Horner's syndrome in an English Cocker Spaniel was cured by ST-4 and GB-1 acupuncture treatment.

side in a dog. A pharmacological test of the pupil was used and showed results similar to sympathomimetics such as 4 to 6% cocaine or 1% hydroxyamphetamine and diluted epinephrine; this test showed the location of the lesion in Horner's syndrome to be pre- or postganglionic neurons [2]. The prominent causes of Horner's syndrome in dogs and cats were found to be trauma and optic problems, but the etiology could not be determined in 50% of all cases [6,11]. The clinical signs of idiopathic Horner's syndrome usually improve in 1 to 2 months after the initial onset [3,6, 11]. For the treatment of symptoms, 2.5% phenylephrine or 1.0% epinephrine is usually indicated for Horner's syndrome, but an effective treatment method has never been introduced.

In Oriental medicine, Horner's syndrome is thought to be manifested by derangement of Qi and Blood. According to the theory of traditional Oriental medicine, nerve paralysis of the face resulted from an attack of pathogenic wind or cold (one of the six exogenous pathogens) to the Stomach and Small intestine meridian (or channel). Wind-cold attack could be promoted by disharmony in the Qi and Blood [1,8]. Acupuncture restores the harmony of the Qi and Blood [4].

In veterinary Oriental medicine, GB-1 is used to treat idiopathic trigeminal nerve paralysis [5]. The present case was treated with only AP, with the use of any medication or injection drugs. The specific ophthalmic signs were alleviated by one AP treatment, and disappeared after additional AP treatment on the following day.

The healing mechanisms of AP are not clear. However, the selected acupoints, ST-4 and GB-1, cross the path of the ocular lesion through the Stomach and Gallbladder meridian. Both of the meridians are Yang meridians that pass around the eye. In accordance with the 'Exposition of the Fourteen Meridians' the Stomach meridian runs around the face, and the Gallbladder meridian circles the lateral head [15]. Moreover, immunomodulatory and neuromodulatory effects of AP have recently been reported, and suggest that acupuncture regulates the autonomic nervous system and induces parasympathetic nerve stimulation [12]. AP

stimulation has been found to increase skin sympathetic nerve activity [7]. In this study, the present case was diagnosed according to specific clinical signs of idiopathic Horner's syndrome, and was treated twice by ST-4 and GB-1 acupoint manual stimulation, with dramatic results. Although this method has only been used on one case, this case may indicate the use of needle-AP treatment for idiopathic Horner's syndrome in dogs. ST-4 and GB-1 acupoint needling appeared to have a dramatic effect on idiopathic Horner's syndrome. In addition, more cases should be investigated in order to determine the efficacy of acupuncture in Horner's syndrome.

The diagnosis of idiopathic Horner's syndrome was based on ophthalmologic, neurological, and radiological examination. The most important clinical signs were the specific ocular signs (unilateral miosis, ptosis, enophthalmos, and prolapsed nictitans). It is thought that conservative therapy in the form of traditional AP treatment might be a useful choice of therapeutic plan for neurological disorders, including Horner's syndrome. Our findings also suggest that ST-1 and GB-4 are useful acupoints for idiopathic Horner's syndrome cases.

Acknowledgments

This paper was supported by Wonkwang University in 2008.

References

1. **Carlsson C.** Acupuncture mechanisms for clinically relevant long-term effects- reconsideration and a hypothesis. *Acupunct Med* 2002, **20**, 82-99.
2. **George ND, Gonzalez G, Hoyt CS.** Does Horner's syndrome in infancy require investigation? *Br J Ophthalmol* 1998, **82**, 51-54.
3. **Herrera HD, Suranit AP, Kojusner NF.** Idiopathic Horner's syndrome in collie dogs. *Vet Ophthalmol* 1998, **1**, 17-20.
4. **Im PO, Yolton RL.** Concepts of traditional oriental medicine. *Optometry* 2000, **71**, 621-629.
5. **Jeong SM.** Electroacupuncture treatment for idiopathic trigeminal nerve paralysis in a dog. *J Vet Clin Med* 2001, **18**, 67-69.
6. **Kern TJ, Aromando MC, Erb HN.** Horner's syndrome in dogs and cats: 100 cases (1975-1985). *J Am Vet Med Assoc* 1989, **195**, 369-373.
7. **Kimura K, Masuda K, Wakayama I.** Changes in skin blood flow and skin sympathetic nerve activity in response to manual acupuncture stimulation in humans. *Am J Chin Med* 2006, **34**, 189-196.
8. **Liu J, Jiang D, Yu M, Yang J.** Observation on 63 cases of facial paralysis treated with acupuncture. *Zhen Ci Yan Jiu* 1992, **17**, 85-6, 89.
9. **Lynch JH, Keneally RJ, Hustead TR.** Horner's syndrome and trigeminal nerve palsy following epidural analgesia for labor. *J Am Board Fam Med* 2006, **19**, 521-523.
10. **Mirzai H, Baser EF.** Congenital Horner's syndrome and the usefulness of the apraclonidine test in its diagnosis. *Indian J Ophthalmol* 2006, **54**, 197-199.
11. **Morgan RV, Zanotti SW.** Horner's syndrome in dogs and cats: 49 cases (1980-1986). *J Am Vet Med Assoc* 1989, **194**, 1096-1099.
12. **Mori H, Nishijo K, Kawamura H, Abo T.** Unique immunomodulation by electro-acupuncture in humans possibly via stimulation of the autonomic nervous system. *Neurosci Lett* 2002, **320**, 21-24.
13. **Pancieria RJ, Ritchey JW, Baker JE, DiGregorio M.** Trigeminal and polyradiculoneuritis in a dog presenting with masticatory muscle atrophy and Horner's syndrome. *Vet Pathol* 2002, **39**, 146-149.
14. **Peng S, Wang S, Zhao JH.** Clinical observation on point-through-point therapy of scalp electroacupuncture for treatment of facial spasm. *Zhongguo Zhen Jiu* 2006, **26**, 563-565.
15. **Qin ML.** Chinese Acupuncture and Moxibustion. pp. 3-4, Churchill Livingstone, New York, 1993.
16. **Qiu XH, Xie XK, Xie K.** Point-through-point acupuncture for treatment of peripheral facial paralysis. *Zhongguo Zhen Jiu* 2006, **26**, 287-289.