

## Use of Electroacupuncture Treatment on Traumatic Facial Nerve Paralysis in a Horse

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**Abstract :** A 4-year-old Thoroughbred gelding was referred to Chonbuk National University Animal Medical Center with inability to blink and drooping lower lip on the right side after traumatic accident. Through clinical examination, the horse was diagnosed as right-sided facial nerve paralysis. Acupuncture treatment was performed to treat the facial nerve paralysis. The selected acupoints were ST3, ST5, ST7, ST9, SI17, CV24 and Yintang. At the end of the 2<sup>nd</sup> weeks of electroacupuncture treatment, the palpebral reflex was normally recovered. One month after the therapy, symmetry of the face was completely accomplished without the drooping lower lip. This case shows that electroacupuncture should be considered as an effective therapy for the traumatic facial nerve paralysis in horse.

**Key words :** facial nerve, paralysis, electroacupuncture, horse.

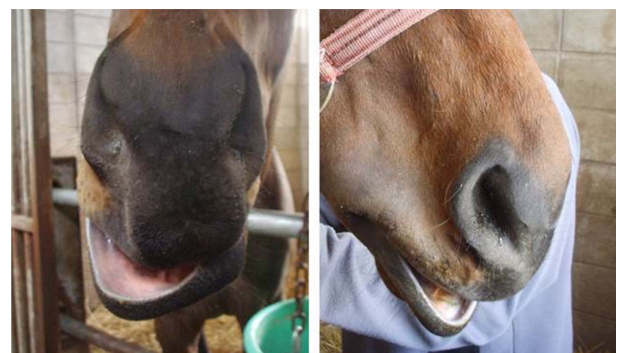
### Introduction

Facial nerve paralysis is a complete or partial paralysis of the muscles innervated by the 7<sup>th</sup> cranial nerve (1). Although the reason has not exactly been revealed in several domestic species, it is associated with infection, trauma, endocrine disorder, equine protozoal myeloencephalitis (EPM), viral encephalitis, otitis interna, and temporohyoid osteopathy (THO) (3,7,8). In horse, the most common cause is traumatic accident due to nerve damage. Facial nerve paralysis induces asymmetrical face form and specific clinical signs including ptosis, drooling, and drooping of the lower lip are shown (2). Spontaneous improvement has normally been observed over days or weeks without treatment, but it can also persist for months to years (3,8). In such cases, various methods have been used to treat facial nerve paralysis, and a suitable method is physical therapy using electroacupuncture used to improve various diseases (2,6,9). In equine practice, electroacupuncture has recently been applied for muscular and neurological conditions such as lameness, back pain, laryngeal hemiplegia, and peripheral nerve disorders (5,9). This clinical case describes the use of electroacupuncture on traumatic facial nerve paralysis in a horse.

### Case

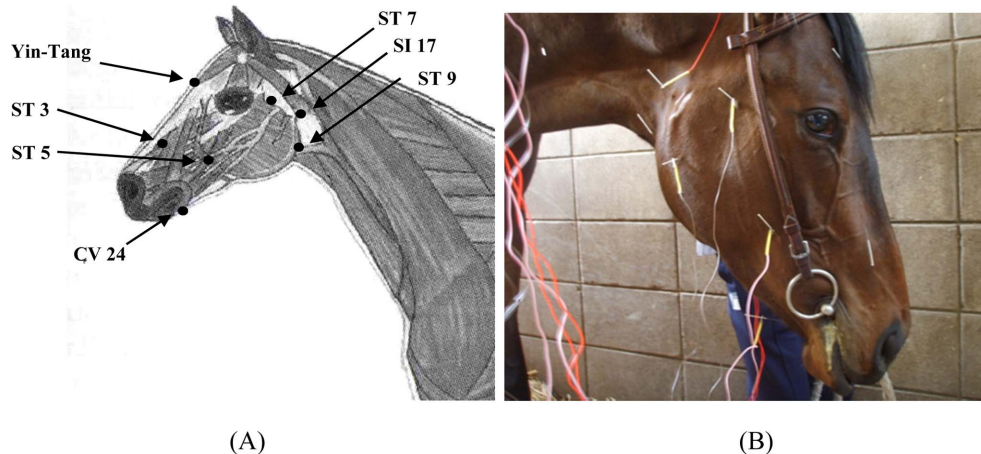
A 4-year-old Thoroughbred gelding was referred to veterinary medical teaching hospital for acupuncture treatment of inability to blink and drooping lower lip on the right side.

The horse had a history with clashed of head into the wall during blood sample collection from the jugular vein 6 weeks ago. The clinical signs were drooping of right lower lip with retention of food and no palpebral reflex on the right eye (Fig 1). The left side was totally normal. The neurological problems had gotten worse as time goes on despite of medical treatment with 0.2 mg/kg of dexamethasone per day. The horse was diagnosed as a traumatic facial nerve paralysis based on clinical examinations. As the horse was not response from medical treatment and had a sign of gastric ulcer as well, electroacupuncture treatment was only performed with no drug. The horse was treated every day for 2 weeks, then horse every 2 days during the following 2 weeks, for a total of 21 sessions. The used acupuncture points were ST3, ST5, ST7, ST9, SI17, CV24 and Yintang (Fig 2a). The electric stimulation was used at 20 Hz for 10 minutes, then at 80 to 120 Hz for 10 minutes with connection of bipolar electrode pairs as the previous our clinical study (Fig 2b) (9).



**Fig 1.** Asymmetrical face by drooping of the right lower lip before electroacupuncture treatment.

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**Fig 2.** (A) Used acupuncture points for facial nerve paralysis. (B) Electroacupuncture treatment for traumatic facial nerve paralysis on right side.



**Fig 3.** One month after electroacupuncture treatment, symmetry of the face was completely accomplished with no drooping lower lip.

ST3 is located on the lateral surface of the face. ST5 is located on the anterior border of the masseter muscle. ST7 is located at the lower border of the zygomatic arch. ST9 is located in the depression caudal to the angle of mandible. SI17 is located caudal to the angle of the mandible. CV24 is located below the middle of the lower lip and Yintang point is located on the midline between the medial ends of the eyebrows (5,12). At the end of the 2<sup>nd</sup> weeks of electroacupuncture treatment, the palpebral reflex was normally recovered. One month after the treatment, symmetry of the face was completely accomplished without the drooping lower lip (Fig 3).

### Discussion

The treatment of facial nerve paralysis depends on underlying causes, but sometimes the prognosis may be poor (8). As traumatic injury of facial nerve results from anatomic features such as nerve location in subcutaneous tissue and the nerve passing over prominent facial bone in equine practice, facial nerve paralysis can be accompanied with local inflammatory response involving the nerve so that it might be continued for long period (3). It has been reported that some horses with facial nerve dysfunction took a time as long as

18 months up to 6 years (7). If suitable therapies should not be performed at the time, patient has anorexia, breathing disorder, behavior change and mental depression by facial asymmetry (2). There has been known no specific therapy for facial nerve damage. It has been recommended using physical therapies such as acupuncture, massage, hot pack, and exercise for the strength of facial muscles (2,4).

Acupuncture is one of beneficial methods without any side effects on damaged facial nerve in this situation. In traditional veterinary medicine, facial nerve paralysis is caused by local Qi-Blood stagnation. Especially, electroacupuncture has been used as more effective method with two effects of muscle stimulation and movement of Qi-Blood to resolve local stagnation (10). It has been also studied electroacupuncture has beneficial effects of functional peripheral nerve regeneration and improvement of tissue healing (10,11). In this case ST3, ST5, ST7, ST9, SI17, and CV24 acupoints were used for the treatment both Qi and blood circulation around facial nerve. Yintang acupoint was used to induce calming effect in the horse with history of headshaking (12). No side effect was found during the total treatment period.

Therefore, electroacupuncture should be considered as a primary treatment option for traumatic facial nerve paralysis in horse.

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## 손상성 안면신경마비를 가진 말에서 전침치료 적용 증례

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**요 약** : 4년령 더브레드 중성화 수컷이 우측 안면부 손상 후 안검반사 불능과 아랫입술 처짐 증상으로 대학병원에 의뢰되었다. 신체검사를 통해 그 말은 우측 안면신경마비로 진단되었고, 치료를 위해 한방 침치료가 적용되었다. 침자리는 ST3, ST5, ST7, ST9, SI17, CV24 과 인당혈을 사용하였다. 전침치료 2 주후 안검반사가 정상적으로 회복되었고, 치료시작 한 달후 안면부 아랫입술 처짐 증상 없이 완전한 대칭상태로 정상회복되었다. 본 증례는 손상성 안면신경마비가 있는 말에서 전침을 사용하여 효과적으로 치료한 것이다.

**주요어** : 안면신경, 마비, 전침, 말