

## Clinical Research

# Electroacupuncture therapy for ophthalmoplegia: a case series\*

## 电针治疗眼肌麻痹系列病例分析\*

LIU Zhi-dan (刘志丹)<sup>1</sup>, HU Jun (忽俊)<sup>2✉</sup>, ZHOU Wei-kang (周伟康)<sup>3</sup>

1. Department of Acupuncture, Shanghai Baoshan Hospital of Integrated Traditional Chinese Medicine and Western Medicine, Shanghai 201999, China; 2. Department of Ophthalmology, Shanghai Baoshan Hospital of Integrated Traditional Chinese Medicine and Western Medicine; 3. School of Basic Medical Science, Nanjing University of Chinese Medicine (1. 上海市宝山区中西医结合医院针灸科, 上海 201999, 中国; 2. 上海市宝山区中西医结合医院眼科, 上海 201999, 中国; 3. 南京中医药大学基础医学院, 南京 210046, 中国)

### ARTICLE INFO

First author: Liu Zhidan (1981-), male, attending physician.

Research field: mechanism study on Acupuncture.

E-mail: liuzhidan@vip.163.com

✉ Corresponding author: Hu Jun (1976-), female, vice Professor.

Research field: ophthalmology.

E-mail: hujun78731@sina.com

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### ABSTRACT

**Objective** To probe the effective therapy for electroacupuncture treatment of ophthalmoplegia. **Methods** Twelve patients diagnosed with ophthalmoplegia were treated with acupuncture for 6–14 weeks, three times per week, until recovery was complete. **Results** Eleven patients recovered completely after 2–3 months, and one patient recovered after 6 months. No recurrence was observed among all patients within 6–12 months. **Conclusions** Electroacupuncture treatment improved eye movement and the quality of life of 12 patients with ophthalmoplegia. However, randomised controlled studies are needed to verify the efficacy of electroacupuncture treatment.

**KEY WORDS:** Acupuncture; electroacupuncture; ophthalmoplegia; oculomotor nerve palsy; abducent paralysis

Ophthalmoplegia, which is paralysis or weakness of one or more muscles that control eye movement<sup>[1-2]</sup>, is a common clinical symptom treated in ophthalmology and internal medicine departments. The condition is caused by any of several neurological disorders and may be myopathic (i.e., the muscles controlling eye movements are directly involved), or neurogenic (i.e., the nerve pathways controlling the eye muscles are affected) The specific causes of ophthalmoplegia include diseases or conditions affecting the brain or eye, such as inflammation, vascular disease, trauma, poisoning, and tumours<sup>[3-4]</sup>. However, numerous patients present with ophthalmoplegia induced by nonspecific causes, called idiopathic ophthalmoplegia, the etiological classification of which is similar to that of Bell palsy in facial paralysis.

The extraocular muscles are primarily influenced

by the oculomotor, trochlear, and abducent nerves. The coordinated contraction and relaxation movements of the extraocular muscles enable the eyeball to freely rotate. Therefore, the main clinical manifestations of disease are accompanied by conditions such as strabismus, diplopia, ptosis, pupillary abnormalities, reduced visual acuity, orbital pain, headache, dizziness, fever, dysphagia, and hoarseness. Lesions are ordinarily located in the cerebral cortex, brainstem, cavernous sinus, and superior orbital fissure to any part of the orbital cavity. The lesions are divided into those around, below, within, or above the nuclear portion. Damage of the oculomotor nerve above the nuclear portion may cause gaze palsy. However, the reported lesion sites have all been in the oculomotor control nerve, muscle, or neuromuscular junction<sup>[3-4]</sup>.

Patients with cerebral cortex nervous system dysfunctions and amyasthenia typically visit

neurology departments. However, patients with disorders involving nuclear or nuclear and peripheral oculomotor nerve damage and muscle or nerve-muscle joint lesions generally prefer to seek medical care from ophthalmology departments for obvious strabismus and diplopia symptoms and mild neurological symptoms.

Medications, including nerve neurotrophic agents and vasodilators, are conventionally used by Western clinicians, and some patients must wear a triple prism, which is similar to an eyeglass, to eliminate diplopia by the three triple light refraction principles, or are treated surgically. However, a triple prism is not a permanent solution, and surgery is effective for treating primary lesions but is not ideal for facilitating functional recovery.

Traditional Chinese medicine (TCM), especially acupuncture, is used for treating ophthalmoplegia-related symptoms in China, but evidence-based clinical reports or trials have been rare. In this study, we report the results of electroacupuncture therapy for ophthalmoplegia on an aptotic acupoint group selected according to the anatomical location of the affected parts and the specific function of some acupoints.

## TYPICAL CASES

Twelve patients with symptoms of diplopia or secondary symptoms of ptosis initially visited the ophthalmology department and were diagnosed with peripheral ophthalmoplegia; they were then referred to the acupuncture department for consultation. Among the patients, five patients had abducent palsy and seven patients had oculomotor palsy. Among the seven oculomotor palsy patients, one patient had diabetes and experienced two palsy episodes (Case 1), one patient developed palsy in combination with a stroke (Case 2), two patients experienced a transient ischemic attack, and the remaining patients had idiopathic palsy. Cranial trauma caused the palsy of one abducent palsy patient (Case 3); another abducent palsy patient developed palsy after surgery. The palsy of the other three abducent palsy patients (one of which was Case

4) was idiopathic. Four typical cases (Cases 1–4) are listed as follows.

Case 1 involved a 57-year-old male driver who experienced ophthalmoplegia twice. The patient visited our clinic for recurrence of the same symptom on the left side approximately 1 year after his first experience of ophthalmoplegia, which completely recovered after acupuncture therapy. For the first visit, the patient had left upper eyelid ptosis and diplopia; but at the second visit, he initially sought medical treatment for right upper eyelid ptosis, presenting with a blood glucose level of 14.7 mmol/L. The patient had a 10-year history of diabetes mellitus, and blood glucose levels had been high for a period of >3 months. A right upper eyelid ptosis and eyeball movement difficulty were noted when the patient looked to the left (Figure 1. Left upper eyelid ptosis and eyeball movement difficulty were noted when the patient looked to the right at the onset of ophthalmoplegia). The patient had a blood glucose level of 17.6 mmol/L and a blood pressure of 130/84 mmHg. Neurophysical and cardiovascular system examination results were normal, but a computed tomography (CT) scan revealed lacunar infarction. A diagnosis of diabetic neuropathy was considered. Acupuncture therapy began one or two days after the onset of palsy.

Case 2 involved a 66-year-old male without a related history. He initially presented at the hospital with a stroke, ptosis of the left eyelid, and severely limited eyeball movement. No abnormalities were found in the blood pressure, blood glucose level, CT, an electrocardiogram (EKG), neurophysical, and cardiovascular system examinations results, but the CT scan revealed lacunar infarction. Acupuncture therapy began immediately.

Case 3 involved a 37-year-old male farmworker who had fallen from a height of 5 m. A right-side skull fracture, a bilateral occipital bone and right wrist fracture, epidural hematoma, and intracranial lateral rectus paralysis were revealed upon examination at the hospital. Mild internal oblique and diplopia were

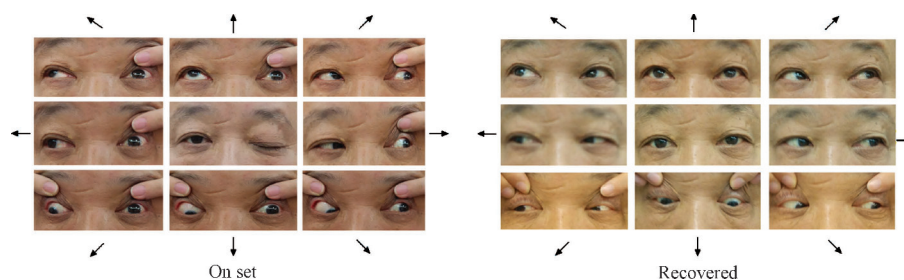


Figure 1 Eye movement of Case 1 before and after acupuncture treatment

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