

Clinical Study on Treating Acquired Blepharoptosis with Acupuncture and Injection to Some Acupoints

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ABSTRACT

Background: In recent years, acquired blepharoptosis(ptosis) is seen on occasion and may result from high fever and viral infectious diseases. It may present with various symptoms, including visual field obstruction, headache, double vision, and fatigue. Therefore, more and more attention has been paid to early diagnosis and treatment of acquired ptosis. **Objective:** To observe the clinical effect of acupuncture and injection to some acupoints for acquired ptosis. **Methods:** 74 patients with acquired ptosis were randomly allocated into a study group with 42 cases (48 eyes) or a control one with 32 cases (39 eyes). The study group was treated with acupuncture and injection to some acupoints, while control group was treated with intramuscular injection of 0.05% proserine and administration of prednisolone. In study groups, 0.2mL of 0.05% proserine was injected to each pts of Chan Zhu (BL2), Yu Yao (EX-HN4), Tong Zi Liao (GB1) once in two days. In addition, in study groups, according to pattern identification, acupuncture was applied on the pts of Ge Shu (BL17), Qi Hai (CV6), San Yin Jiao(SP6) in qi-blood deficiency pattern, Zu San Li (ST36), San Yin Jiao(SP6), Pi Shu (BL20) in spleen qi weakness pattern, He Gu (LI4), Feng Chi (GB20), Tai Chong (LR3) in wind-phlegm pattern, He Gu (LI4), Tai Chong(LR3), Gan Shu (BL18) in qi-blood stagnation pattern. **Results:** The clinical efficacy was 91.6% in the study group, being significant as compared with the control one (79.6%; $p < 0.05$). **Conclusions:** Acupuncture and injection to some pts are effective for acquired ptosis and worthwhile to apply.

Keywords: Acupuncture, Acquired Blepharoptosis (Ptosis), Acupoint.

Article Information

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1. INTRODUCTION

Acquired ptosis can be classified by the cause and may result from entire or partial third nerve palsy due to influenza, febrile disease, encephalitis and cerebral hemorrhage or inflammation or tumor of orbit or paranasal sinuses. Considering the modern medical treatment of acquired ptosis at home and abroad till now indicates that there are no other therapeutic methods with an exception of pharmacotherapy and surgical method. We investigated to treat acquired ptosis combining

acupuncture and injection to some acupoints selected.

2. MATERIALS AND METHOD

2.1 Materials

Patients with acquired ptosis who visited Koryo Medicine General Hospital and Nampho General Hospital during 2017-2022 were divided into the study group (42 cases; 48 eyes) and the control one (32 cases; 39 eyes) for the study. Patients with scars or inflammation around the eyes were excepted from study subjects. As for the ages of patients, they were between 10 and 60 years old. As for the gender,

women were more than men (33 cases of men (44.6%) and 41 cases of women (55.4%)).

2.2 METHOD

2.2.1 The study group

0.2mL of 0.05% proserine was injected to each pts of Chan Zhu (BL2), Yu Yao (EX-HN4), Tong Zi Liao (GB1) once in two days. In addition, in study groups, according to pattern identification, acupuncture was applied on the pts of Ge Shu (BL17), Qi Hai (CV6), San Yin Jiao (SP6) in qi-blood deficiency pattern, Zu San Li (ST36), San Yin Jiao (SP6), Pi Shu (BL20) in spleen qi weakness pattern, He Gu (LI4), Feng Chi (GB20), Tai Chong (LR3) in wind-phlegm pattern, He Gu (LI4), Tai Chong (LR3), Gan Shu (BL18) in qi-blood stagnation pattern.

2.2.2 The control group

On the basis of reference data, 0.5mL of 0.05% proserine was intramuscularly injected twice a day and prednisolone was administered 30mg each 3 times a day, decreasing doses since two weeks of treatment onset.

2.2.3 Indices of observation

-subjective symptoms: visual disorder, double vision, drooping of the eyelid
-objective test

① MRD (margin-reflex distance)

The location of the lid margin is measured with the patient looking in primary gaze. This may be recorded as the position (in millimeters) of the eyelid with respect to the pupillary light reflex. MRD1, which is the distance from the upper eyelid margin to the pupillary light reflex in primary position is probably the single most important measurement in describing the amount of ptosis. Lower eyelid retraction (or scleral show) should be noted separately as the margin-reflex distance 2 (MRD2). MRD2 is the

distance from the pupillary light reflex to the lower eyelid margin.

② Levator muscle function (margin limbal distance (MLD))

Levator muscle function is indirectly measured by determining the distance from the limbus at the 6 o'clock position to the upper eyelid margin (MLD) as the patient looks in upgaze. The eyebrow is manually fixed against the supraorbital rim during this measurement, preventing the frontalis muscle from contributing to eyelid movement.

2.2.4 Criteria for assessment of therapeutic efficacy

The therapeutic efficacy is mainly assessed by changes in subjective symptoms and physical examination indices. Remarkable improvement: subjective symptoms were completely improved as compared with before treatment and MRD1 was more than 3mm. Improvement: subjective symptoms were improved as compared with before treatment and MRD1 was between 2 and 3mm. No change: subjective symptoms were not improved as compared with before treatment and MRD1 was less than 2mm.

2.2.5 Statistical analysis

Statistical analysis was performed using SPSS version 17.0 statistical software. Data were expressed as mean $\pm$ standard error ($\bar{X} \pm SE$) and analyzed by χ^2 test and t test. Statistical analyses with the P value less than 0.05 were considered significant.

3. RESULT

3.1. Change in subjective symptoms

As shown in Table 1, there was a significant difference in subjective symptoms in the study group as compared with the control one ($p < 0.05$).

Table 1. Change in subjective symptoms.

Groups			Visual disorder	Double vision	Drooping of the eyelid
The study group (n=48)	Before treatment		38(79.1)	15(31.2)	48(100.0)
	After treatment	Remarkable improvement	23(60.5)	9(60.0)	24(50.0)
		Improvement	12(31.6)	5(33.3)	20(41.6)
		No change	3(7.9)	1(6.7)	4(8.3)
		Efficacy (%)	35(92.1)*	14(93.3)*	44(91.6)*
The control group (n=39)	Before treatment		32(82.1)	13(33.3)	39(100.0)
	After treatment	Remarkable improvement	11(34.4)	5(38.5)	15(38.5)

Groups			Visual disorder	Double vision	Drooping of the eyelid
		Improvement	13(40.6)	6(46.2)	16(41.0)
		No change	8(25.0)	2(15.3)	8(20.4)
		Efficacy (%)	24(75.0)	11(84.7)	31(79.6)

(): % *: $p < 0.05$ (compared with the control group).

3.2. Change in objective symptoms

① Change in MRD1

As seen in Table 2, MRD1 was 1.27 ± 0.10 , 1.23 ± 0.10 respectively in study group and control one before treatment whereas MRD1 was 3.97 ± 0.06 , 3.11 ± 0.14 respectively after treatment. There was a significant difference between both groups ($p < 0.05$).

② Change in levator muscle function

As shown in Table 3, considering change in levator muscle function in study group and control one indicates that there was a significant difference between both groups before and after treatment ($p < 0.05$, $p < 0.01$).

③ Change in mean eyesight

As shown in Table 4, there was a significant difference in mean eyesight in the study group as compared with the control one ($p < 0.05$).

④ Corrective effect of ptosis according to pattern identification

Table 5 shows that a significant difference was recognized in corrective effect of acquired ptosis ($p < 0.05$).

3.3. General therapeutic results

As shown in Table 6, the clinical efficacy was 91.6% in the study group, being significant as compared with the control one (79.6%; $p < 0.05$).

Table 2. Change in MRD1 ($\bar{X} \pm SE$, mm).

Groups	Before treatment	After treatment
The study group (n=48)	1.27 ± 0.10	$3.97 \pm 0.06^{*\Delta}$
The control group (n=39)	1.23 ± 0.10	$3.11 \pm 0.14^*$

*: $p < 0.001$ (compared with the pretreatment) Δ : $p < 0.05$ (compared with the control group).

Table 3. Change in levator muscle function ($\bar{X} \pm SE$, mm).

Groups	Before treatment	After treatment
The study group (n=48)	6.79 ± 0.14	$9.57 \pm 0.11^{*\Delta}$
The control group (n=39)	6.39 ± 0.28	$8.37 \pm 0.29^*$

*: $p < 0.05$ (compared with the pretreatment) Δ : $p < 0.05$ (compared with the control group)

Table 4. Change in mean eyesight ($\bar{X} \pm SE$).

Groups	Before treatment	After treatment
The study group (n=48)	0.51 ± 0.03	$0.75 \pm 0.02^*$
The control group (n=39)	0.46 ± 0.03	0.59 ± 0.03

*: $p < 0.05$ (compared with the control group).

Table 5. Corrective effect of ptosis according to pattern identification.

Groups			qi-blood deficiency pattern	spleen qi weakness pattern	wind-phlegm pattern	qi-blood stagnation pattern
The study group (n=48)	Before treatment		11(22.9)	13(27.0)	12(25.0)	12(25.0)
	After treatment	Remarkable improvement	4(36.4)	6(46.1)	8(66.7)	6(50.0)
		Improvement	6(54.5)	5(38.5)	4(33.3)	5(41.7)
		No change	1(9.1)	2(15.4)		1(8.3)
		Efficacy (%)	10(90.9)	11(84.6)	12(100.0)	11(91.7)*
The control group (n=39)	Before treatment		9(23.0)	11(28.2)	10(25.6)	9(23.0)
	After treatment	Remarkable improvement	4(44.4)	5(45.5)	3(30.0)	3(33.3)
		Improvement	3(33.3)	2(18.2)	6(60.0)	5(55.6)

Groups			qi-blood deficiency pattern	spleen qi weakness pattern	wind-phlegm pattern	qi-blood stagnation pattern
		No change	2(22.3)	4(36.4)	1(10.0)	1(11.1)
		Efficacy (%)	7(77.7)	7(63.7)	9(90.0)	8(88.9)

(): %, *: $p < 0.05$ (compared with the control group).

Table 6. General therapeutic results.

Groups	Remarkable improvement	Improvement	No change	Efficacy
The study group (n=48)	24(50.0)	20(41.6)	4(8.4)	44(91.6)*
The control group (n=39)	15(38.5)	16(41.1)	8(20.4)	31(79.6)

(): %, *: $p < 0.05$ (compared with the control group).

4. DISCUSSION

Blepharoptosis (Ptosis) is defined as an abnormally low position of the upper eyelid margin, determined while the eye is looking in primary gaze. It may result from trauma, masses, and congenital or acquired abnormalities of the levator or Müller neuromuscular complexes. More and more attention has been paid to early diagnosis and treatment of acquired ptosis. According to pattern identification, different acupoints were selected for acupuncture therapy and combined with 0.05% proserine injection to pts of Chan Zhu (BL2), Yu Yao (EX-HN4), Tong Zi Liao (GB1). As a result, subjective and objective symptoms were improved significantly in the study group as compared with the control one ($p < 0.05$).

5. CONCLUSIONS

Combining 0.05% proserine injection to pts of Chan Zhu (BL2), Yu Yao (EX-HN4), Tong Zi Liao (GB1) and applying acupuncture to pts according to pattern identification led to 91.6% of the therapeutic efficacy in the study group, being significant as compared with the control one (79.6%; $p < 0.05$).

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Declaration of competing interest

The authors declare that they have no conflict of interest.

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Author Contribution

An Yong Ran and Chae Myong Chan: Clinical Application, Choe Il and Jang Mi: Reference Research, Jo Hyon Ju and Kim Jong Hui: Article Table preparation, Kim Sung Jin and Kim Kwang Hyok: Clinical Introduction

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