



Case report

Acupuncture and Kinesio Taping for the acute management of Bell's palsy: A case report



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ABSTRACT

Background: Bell's palsy is an idiopathic, acute peripheral palsy of the facial nerve that supplies the muscles of facial expression. Despite an expected 70% full recovery rate, up to 30% of patients are left with potentially disfiguring facial weakness, involuntary movements, or persistent lacrimation. The most frequently used treatment options are corticosteroids and antiviral drugs. However, accompanying clinical conditions, such as uncontrolled diabetes, hypertension, gastrointestinal disturbances, polypharmacy of geriatric patients, and significant sequelae ratios, indicate the need for safe and effective complementary therapies that would enhance the success of the conventional interventions.

Case summary: A 26-year-old female presented with numbness and earache on the left side of the face; these symptoms had been ongoing for 8–10 h. Physical examination revealed peripheral facial paralysis of House-Brackmann grade III and corticosteroid-valacyclovir treatment was initiated. On the same day, Kinesio Taping was applied to the affected nerve and muscle area with the aim of primarily neurofacilitation and edema-pain relief. On the fifth day, acupuncture treatment was started and was continued for 3 consecutive days. A physical therapy program was administered for the subsequent 10 days. At the 3-week follow-up examination, Bell's palsy was determined as grade I, and the treatment was stopped.

Conclusion: Acupuncture and Kinesio Taping, in conjunction with physical therapy modalities, are safe and promising complementary therapies for the acute management of Bell's palsy. However, further large scale and randomized controlled studies are necessary to assess whether these complementary interventions have significant additive or synergistic effect for complete recovery of patients with Bell's palsy.

1. Introduction

Bell's palsy is an idiopathic, acute, peripheral palsy that involves the facial nerve supplying the muscles of facial expression.¹ Bell's palsy is responsible for about 80% of all facial mononeuropathies and affects 11–40 individuals per 100,000 each year.² The cause of Bell's palsy is believed to be inflammation of the facial nerve at the geniculate ganglion, but the cause of the inflammatory process itself remains uncertain. Increasing evidence implicates a role for the reactivation of latent herpes viruses from cranial nerve ganglia.^{1,3}

Bell's palsy typically presents with a sudden and rapid onset of unilateral facial weakness, often within a few hours. Other symptoms include impaired ipsilateral movement of the affected side of the face, drooping of the eyebrow and corner of the mouth, and the loss of the ipsilateral nasolabial fold. Patients may also complain of ipsilateral earache, as well as numbness of the face. The most widely used and accepted clinical tool for documenting the degree of facial paralysis and

for estimating recovery level is the modified House-Brackmann scale. The grading is from 1 to 6, with the latter being total paralysis.²

Corticosteroids, antiviral drugs, and physical therapy modalities (such as electrotherapy, biofeedback, and exercises) are the most frequently used treatment options.^{2,4,5} Despite some favorable results, evidence for the efficacy of acupuncture for the treatment of Bell's palsy is limited due to the lack of qualified studies.^{6,7} Kinesio Taping (KT) is used with other physical agents for the rehabilitation of musculoskeletal and neurological disorders, as it has positive effects on edema, neurofacilitation, pain, and functional activities. However, no scientific data yet supports the efficacy of KT as a treatment for Bell's palsy.^{8,9} The patient described in the present paper was treated with acupuncture and KT in the acute phase of Bell's palsy, in addition to the classical therapy methods, and showed an almost total and rapid recovery in approximately 3 weeks.

Abbreviations: KT, Kinesio Taping; VAS, Visual analogue scale

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Fig. 1. On initial evaluation; asymmetrical mouth movement with maximal effort (left) and complete and strong eye closure (right).

2. Case presentation

A 26-year-old female patient was referred to the physiatry outpatient clinic with numbness and discomfort (according to the patient's expression) on the left side of the face; the symptoms had been ongoing for 8–10 h. She reported earache at an intensity of 6 on a 10-point visual analogue pain scale (VAS). She seemed extremely concerned by this very sudden and unforeseen onset. Her medical history revealed no systemic illness, such as diabetes or hypertension, and she had no history of viral or any other infection. The patient was not taking any medication, had not recently undergone surgery or trauma, and was not pregnant. During her consultation by a neurologist and an otorhinolaryngologist, progressive paralysis of mimic muscles was observed over a period of approximately 1 h. Physical examination revealed normal external auditory canals and tympanic membranes. The assessment of facial nerve function determined left-sided peripheral facial paralysis of House-Brackmann grade III, with the following clinical findings: unable to lift the eyebrow, complete and strong eye closure, and asymmetrical mouth movement with maximal effort (Fig. 1). Head and neck examination and all other physical and neurological examination results were normal. Computed tomography of the brain revealed normal results and laboratory investigations, including hemogram, acute phase reactants, fasting blood sugar, and thyroid function tests, were all within normal limits.

On the same day, KT was applied, primarily to decompress the target tissue, redirect edema, and provide pain relief. KT applications were performed by a physician certified to apply KT, according to the techniques described by the inventor, Dr. Kenzo Kase.¹⁰ A combined method, based on space correction, functional correction, and neural techniques, was performed using three I-shaped KT strips, 2.5 cm wide (Kinesio Tex Gold FP; KT-X-050, Tokyo, Japan). The longer strip was applied with 25% tension over the preauricular facial nerve area using the space correction technique, and the ends were applied without tension towards the temporal and mandibular branches of the facial nerve. One of the shorter strips was applied with a 50% upward stretch from the left corner of the mouth, aiming for functional correction. The other short strip was applied with a 50% stretch along the zygomatic branch, in accordance with the neural technique (Fig. 2). The tapes stayed in contact with the skin for two days. This application was repeated on the third day and the new tapes remained in place for two more days.

Pharmacological therapy was initiated on the day of symptom onset, and a course of oral prednisolone 1 mg/kg/day was administered for 10 days and oral valacyclovir 400 mg \times 5 per day for 5 days.

On the fifth day, acupuncture treatment was started, including the following points: TE17 (dorsal to the earlobe near to the mastoid process), GB14 (above the eyebrow), ST2 (close to the infraorbital foramen), ST4 (lateral to the corner of the mouth), ST5 (on the front edge of the masseter muscle) on the affected side, ST36 (lateral to the anterior crest of the tibia), SP6 (proximal to the medial malleolus), SP9 (distal to the medial condyle of the tibia), and LI4 (in the adductor pollicis muscle) bilaterally. This treatment was applied on 3 consecutive days. The acupuncture needles (0.22 \times 13 mm for the acupoints on the face and 0.25 \times 25 mm for the points over the extremities, Kangnian, China) were left in place for 30 min during each session. Acupuncture therapy was performed by an experienced and certified acupuncturist.

On the tenth day, a physical therapy program was started; this included electrical stimulation (biphasic surge, pulse time 300 microseconds, frequency 50 Hz, 15 contractions, 5 s rest, total 20 min) and electromyographic biofeedback (visual and auditory, 10 min/day) for the facial nerve innervated muscles, as well as mirror exercises. This program was sustained for 10 days. Pain intensity, as defined by a VAS, decreased from 6 to 2 in the first 24 h, and the patient was completely pain free and her anxiety was significantly decreased by the end of the first week. At the 3-week follow-up examination, Bell's palsy was determined as House-Brackmann grade I and the treatment was stopped (Fig. 3). No side effects or unanticipated events were observed in association with the treatment methods described. At the 1-month follow-up examination, the facial weakness had improved, with no sequelae.

3. Discussion

According to the prognosis of Bell's palsy, although approximately 70% of patients recover spontaneously and completely, 15–20% experience slight cosmetic sequelae and the remainder are left with moderate to severe sequelae causing dissatisfaction with the outcome.^{1,5} Full recovery rates with early steroid use exceed 90%.⁵ Facial muscle dysfunction is a disabling condition and has a dramatic effect on psychosocial well-being and on quality of life. This emphasizes the importance of effective and safe treatment options that increase the full recovery rates without sequelae. The exact etiology of Bell's palsy

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