Int J Biol Med Res. 2025; 16(3): 8137-8140

Contents lists available at BioMedSciDirect Publications

International Journal of Biological & Medical Research

Journal homepage: www.biomedscidirect.com

Case report

Integrative Approach of Acupuncture and Yoga Therapy in the Management of Facial Palsy: A Case Report

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ARTICLEINFO

Keywords:
Acupuncture,
Bell's palsy,
Facial paralysis,
Kaki Mudra,
Kechari Mudra,
Nerve regeneration,
Scalp acupuncture,
Sunnybrook score,
Yoga therapy

ABSTRACT

Background: Bell's palsy is a common form of facial nerve palsy characterized by the sudden onset of unilateral facial paralysis. Integrative therapies, including acupuncture and yoga, are gaining recognition for their role in enhancing nerve recovery. Case Presentation: A 50-year-old male presented with left-sided facial paralysis, high blood pressure, and type 2 diabetes mellitus. He was diagnosed with Bell's palsy (House-Brackmann grade IV), and an initial Sunnybrook score of 25 indicated significant facial asymmetry and weakness. Intervention: The patient underwent daily scalp acupuncture targeting motor areas and specific points (ST 5, ST 6, and ST 4), combined with the practice of Kaki Mudra and Kechari Mudra. These interventions aimed to enhance facial muscle control, improve coordination, and promote nerve regeneration. Results: Over the course of the treatment, the patient's Sunnybrook score improved from 25 to 71, demonstrating significant recovery in facial movement, symmetry, and strength. The integrative approach resulted in reduced discomfort and improved quality of life. Conclusion: This case illustrates the potential of combining acupuncture and yoga therapy for managing Bell's palsy. The integrative approach showed promising results, suggesting the need for further studies to establish standardized treatment protocols.

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Introduction

Facial nerve palsy encompasses both paralysis and weakness of the seventh cranial nerve [1]. Facial palsy is commonly seen in neurological practice, usually presenting as unilateral and frequently without a known cause [2]. The leading cause of facial nerve palsy is often unknown and is commonly called "Bell's palsy." The incidence of Bell's palsy varies between 10 to 40 cases per 100,000 people [3].Bell's palsy has an annual incidence rate of about 20 cases per 100,000 individuals, with no specific preference for gender or ethnicity. It can occur in any age group, although the incidence tends to increase slightly after the age of 40. Risk factors linked to Bell's palsy include diabetes, pregnancy, severe preeclampsia, obesity, and hypertension.

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The condition typically presents with the sudden onset of unilateral facial weakness, resembling lower motor neuron paralysis. Additional symptoms often include pain behind the ear, changes in taste sensation (dysgeusia), subjective alterations in facial sensation, and increased sensitivity to sound (hyperacusis) [4,5]. Persistent facial asymmetry and functional impairment from Bell's palsy can hinder essential activities like drinking, eating, and speaking. Additionally, since facial symmetry significantly affects appearance and social interactions, ongoing asymmetry can negatively impact psychological well-being and overall quality of life [6]. The Sunnybrook Facial Grading System is commonly used to assess facial nerve palsy severity and recovery. It evaluates facial movements in three areas: resting symmetry, voluntary movement, and synkinesis (involuntary movements).

The scores provide an overall rating that helps clinicians track progress or decline in nerve function [7]. In China, acupuncture is commonly employed in integrative hospitals to enhance recovery times and outcomes for Bell's palsy. Current research indicates that acupuncture may be more effective than pharmaceutical treatments; however, higher-quality studies are needed to establish a more reliable evidence base. Chinese medicine has acknowledged the symptoms of Bell's palsy for thousands of years and has developed various treatment strategies utilizing acupuncture and Chinese herbal remedies during that time [8].

Scalp acupuncture for paralysis works by stimulating specific zones on the scalp that correspond to areas of the brain controlling motor functions. Needling these regions enhances neural communication and activates

pathways that may have been impaired by stroke or injury, promoting motor recovery. The treatment leverages neuroplasticity, helping the brain to reorganize and restore function to affected muscles [9].

Kaki Mudra involves puckering the lips in a beak-like shape, inhaling deeply, and slowly exhaling to stimulate facial muscles, improve circulation, and promote nerve regeneration. Kechari Mudra involves rolling the tongue towards the soft palate, stimulating cranial nerves (including the vagus nerve) to enhance parasympathetic activity and support facial nerve healing, aiding in facial palsy recovery.

There is a divide between conventional and integrative approaches in treating facial nerve palsy. Conventional treatments rely on corticosteroids and antivirals to reduce inflammation, while integrative methods like acupuncture and yogic practices such as Kaki and Kechari Mudra aim to stimulate neurological function and support nerve regeneration [10-13]. Combining these approaches can provide immediate symptom relief while promoting long-term recovery.

Case Description:

A 50-year-old male patient presented to the outpatient department of the International Institute of Yoga and Naturopathy Medical Sciences, Chengalpattu, on 17.09.2024, with complaints of stiffness on the left side of his face for the past four days and numbness in the soles and foot on the left side. He has a known history of high blood pressure for five years and type 2 diabetes mellitus for the past five years. The patient also reported belching and constipation. He follows a mixed diet, with normal micturition frequency but reports constipation. His sleep has been disturbed for a long time.

Evaluation using the Sunnybrook Facial Grading System and House-Brackmann facial grading system revealed a composite score of 25, indicating significant impairment. The resting symmetry score was 20, demonstrating noticeable eye, cheek, and mouth asymmetry.

The voluntary movement score of 60 reflected mild excursion in facial expressions, while the synkinesis score of 15 indicated slight involuntary movements accompanying voluntary actions (Table 3), and the facial paralysis was classified as House-Brackmann grade IV, indicating moderate weakness respectively. Clinical examination revealed elevated blood pressure at 180/100 mm Hg, a pulse rate of 89 beats per minute, and a respiratory rate of 22 cycles per minute.

The patient weighed 60 kg and had a height of 165 cm, resulting in a 22.04 kg/m^2 BMI. Notable observations included incomplete eye closure and the absence of forehead wrinkles on the left side, raising suspicion about Bell's palsy or related facial nerve pathology. These findings suggest that while some facial movement is retained, the patient continues to face significant challenges with symmetry and coordination, necessitating a comprehensive integrative approach to manage and improve facial nerve palsy.

Diagnosis:

Upon physical examination, there was marked facial asymmetry, with the left side displaying significant drooping; the patient was unable to raise his left eyebrow or close his left eye completely, leading to a risk of exposure keratitis. The left side of his mouth did not elevate during smiling, and the nasolabial fold appeared flattened. Neurological examination revealed that all other cranial nerves were intact, with no deficits in motor strength or sensory function in the limbs.

The facial paralysis was classified as House-Brackmann grade IV, indicating moderate weakness (Figure 1). To establish a diagnosis of Bell's palsy, we considered the sudden onset of unilateral facial paralysis in conjunction with the patient's symptoms and medical history while systematically ruling out differential diagnoses such as stroke, tumors, and infectious causes.

An MRI of the brain was performed, which showed no structural lesions, and blood tests, including serologies for various infections, returned negative results. Therefore, the patient was diagnosed with Bell's palsy, consistent with the typical presentation of acute, unilateral facial paralysis.

In addition to acupuncture, the patient was instructed in two specific mudras: Kaki Mudra and Kechari Mudra. Kaki Mudra involves forming an "O" shape with the lips, simulating the beak of a crow, while inhaling deeply and exhaling through the mouth. This practice is done to improve the coordination of facial muscles and promote relaxation.

Kechari Mudra involves rolling the tongue back to touch the soft palate, which is thought to enhance concentration, relieve stress, and improve overall facial muscle control. This mudra was practiced during and after the acupuncture sessions to further support the treatment.

Monitoring of the patient's progress included assessing changes in facial muscle function and any reduction in pain or discomfort associated with the condition (Table 2).



Facial Area (Lower two fifth of Motor Area)	A line connecting 2 points called the upper and lower points of the motor area. The upper point is situated on the anteroposterior midline, 0.5 cm behind its midpoint. The lower point of the motor area is the point in the tempo-ral region where the supercilio-occipital line intersects the anterior hairline.	2 to o 2.5 cun	Along the motor area through the scalp.

ST4 (Dicang)	0.4 cun lateral to the corner of the mouth.	0.3 – 0.5 cun	Transverse insertion to join with ST6,
ST5 (Daying)	Directly anterior to the angle of the Jaw, in a depression at the anterior border of the masseter muscle.	0.3 – 0.5 cun	Oblique insertion or Transverse insertion to join with ST4.
ST6 (Jiache)	Approximately 1 fingerbreadth anterior and superior to the angle of the Jaw at the prominence of the masseter muscle.	0.5 cun	Perpendicular Insertion

Table 1. Description of acupuncture points used to the patient.

Intervention	Duration	Frequency
Acupuncture*	20 minutes	Daily
Kaki Mudra	5 minutes	Daily
Kechari Mudra	5 minutes	Daily

Table 2. Details of Acupuncture and Yoga Interventions.

Note: *Detailed description of Acupuncture points are given in Table 1.

Sl. No.	Sunny Brook Facial Grading System Parameters	Pre-Score	Post Score.
1.	Resting Symmetry (compared to the normal side)		
	Eyes	1	0
	Cheek (Naso-labial Fold)	2	0
	Mouth	1	0
	Resting Symmetry Score = Sum of points × 5	20	0
2.	Symmetry of Voluntary Movement		
	Forehead Wrinkle	3	3
	Gentle Eye Closure	3	4
	Open Mouth Smile	3	4
	Snarl	3	4
	Lip Pucker	3	4
	Voluntary Movement Score = Sum of points × 4	60	76
3.	Synkinesis		
	Forehead Wrinkle	0	0
	Gentle Eye Closure	0	0
	Open Mouth Smile	1	0
	Snarl	1	0
	Lip Pucker	1	1
	Synkinesis Score = Sum of points × 5	15	5
	Composite Score* =	25	71

Table 3. Pre and post-assessment of Sunny Brook Facial Grading System Score.

*Composite Score = Voluntary Movement Score – Resting Symmetry Score – Synkinesis Score.

Results

The effectiveness of the integrative intervention, which included scalp acupuncture, Kaki Mudra, and Kechari Mudra, was assessed using the Sunnybrook Facial Grading System. Upon initial evaluation, the patient exhibited significant left-sided facial weakness, reflected in a low Sunnybrook score indicative of substantial impairment in facial function and symmetry. Specific deficits included an inability to raise the left eyebrow, marked drooping of the left eyelid, and difficulty in smiling symmetrically.

Following a series of daily acupuncture sessions—targeting the motor area (lower 1/5tharea), ST 5, ST 6, and ST 4—and the practice of Kaki Mudra and Kechari Mudra, the patient's condition showed considerable improvement. At the end of the treatment period, the patient's Sunnybrook score increased to a range of 25 to 71 (Table 3). This substantial improvement indicates a recovery in facial strength, coordination, and symmetry. The patient reported an enhanced ability to raise the left eyebrow, improved movement in the left corner of the mouth during smiling, and a significant reduction in discomfort associated with facial paralysis. These findings suggest that the integrated approach facilitated a favorable recovery trajectory.

Discussion

The positive outcomes observed in this case underscore the potential benefits of a multidisciplinary approach in managing Bell's palsy. Scalp acupuncture likely played a pivotal role in the patient's recovery. Acupuncture is known to stimulate peripheral nerves, promote blood circulation, and enhance the body's innate healing processes [6]. By targeting specific acupuncture points relevant to facial motor function, the treatment may have effectively stimulated the facial nerve, aiding in the restoration of muscle function and reducing inflammation.

Along with scalp acupuncture, the chosen body acupuncture points include—ST 5, ST 6, and ST 4—which are traditionally used for treating facial disorders. ST 5, located near the jaw, is beneficial for enhancing muscle tone in the lower face; ST 6, situated on the masseter muscle, can improve muscle coordination and reduce tension; while ST 4, at the corner of the mouth, is effective for addressing facial asymmetry. The daily application of acupuncture may have ensured consistent stimulation of the facial nerve, critical during the acute phase of Bell's palsy when spontaneous recovery is possible [9].

In addition to acupuncture, the incorporation of Kaki Mudra and Kechari Mudra offered complementary benefits that may have enhanced the overall recovery process. Kaki Mudra involves shaping the lips to promote breath control and relaxation, which can help reduce muscle tension and improve coordination of facial movements. This mudra is particularly valuable in promoting a state of calm, which is essential for effective

rehabilitation. Kechari Mudra, which involves rolling the tongue back to touch the soft palate, supports neuromuscular awareness and can aid in reducing tension in the facial area. This practice fosters a deeper mind-body connection, allowing the patient to engage more fully with their recovery. Both mudras contribute to emotional well-being, which is crucial given the stress and anxiety often associated with sudden facial paralysis [10-13].

The continuous monitoring of the patient's progress was vital in evaluating the effectiveness of the combined interventions. Structured assessments, focusing on improvements in facial muscle function and pain reduction, provided clear indicators of treatment success. The significant increase in the Sunnybrook score reflects not only the physical recovery but also the positive psychological impact of engaging in holistic practices. This case aligns with emerging evidence suggesting that integrative approaches, combining conventional therapies with complementary practices, can lead to enhanced recovery outcomes in patients with Bell's palsy. The combination of scalp acupuncture and yogic practices not only addresses the physical symptoms but also promotes emotional and psychological resilience, offering a comprehensive strategy for patient care.

Conclusion

This case underscores the effectiveness of an integrative treatment plan for managing Bell's palsy, combining scalp acupuncture with Kaki Mudra and Kechari Mudra. The significant improvement observed in the patient's facial function, as indicated by the Sunnybrook Facial Grading System, illustrates the potential of this multifaceted approach to facilitate recovery. By addressing both the physical manifestations of the condition and the emotional well-being of the patient, the treatment not only improved facial symmetry and strength but also enhanced the overall quality of life.

The findings highlight the importance of personalized treatment strategies that consider the unique needs and circumstances of each patient. The positive outcomes from this case warrant further investigation into the mechanisms by which these interventions promote healing and their effectiveness across diverse populations. Future research could lead to the development of standardized protocols that integrate both traditional and complementary therapies, ultimately benefiting a broader spectrum of individuals experiencing Bell's palsy and similar conditions.

Conflict of Interest Statement:The authors declare that there are no conflicts of interest in the publication of this case report. No financial or personal relationships could have influenced the work or the presentation of the information provided in this article.

Patient Consent:Written informed consent was obtained from the patient for the publication of this case report, including all associated clinical data and images. The patient fully understood the purpose of the report and agreed to the sharing of their anonymized information for academic and scientific purposes.

Acknowledgement:

The authors would like to express their gratitude to the International Institute of Yoga and Naturopathy Medical Sciences, Chengalpattu, for providing the necessary facilities to carry out the integrative treatment approach. Special thanks to the nursing staff and support team for their role in patient care and treatment implementation. Lastly, we thank the patient for their willingness to participate and provide valuable feedback during the treatment process.

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