

## CLINICAL VIGNETTE

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# Non-pharmacologic Therapies for Management of Long-term Sequela of Bell's Palsy

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### *Case*

A 72-year-old male presented to an outside hospital for acute onset, right sided facial droop and weakness. He was in his usual state of health when he noticed some right facial tingling sensation followed by sudden facial weakness. His immediate concern was a stroke so his wife took him to the local emergency room for evaluation. While in the ER, he underwent brain MRI which that did not show any evidence of acute ischemia or bleeding. An EKG, labs and chest x-ray were also unremarkable. He was diagnosed with acute right sided Bell's palsy and discharged home with prescriptions for prednisone 60mg daily for seven days and valacyclovir 1000mg three times daily for seven days. He was seen in follow up fourteen days later and had minimal recovery of his facial muscles. He complained of not being able to smile, wink or spit. He had completed the medication as prescribed and was taking appropriate precautions to avoid drying of his right eye.

### *Discussion*

Bell's palsy, also known as idiopathic facial paralysis, is a condition characterized by sudden onset of unilateral loss of facial muscle control. It is most commonly thought to be caused by a herpes virus and can involve the upper, lower or both portions of the face. The degree of dysfunction usually peaks within a few weeks and the timeframe of recovery is variable. The physical examination includes assessment of facial movements like raising brow, smiling, frowning and closing eyes. A complete neurologic examination is important to exclude stroke. While generally not performed, nerve conduction studies and magnetic resonance imaging of the facial nerve can be helpful to confirm the diagnosis. Standard of care for acute treatment is oral glucocorticoids and antivirals.

This paper will discuss non-pharmacologic approaches to management of long-term facial nerve dysfunction in Bell's palsy. A large 15 year cohort study reported 29% of patients did not achieve complete recovery.<sup>1</sup> This leads to a significant number of individuals looking for guidance. In recent years, acupuncture has become a common option for treatment with some evidence to support its use. In its most common form, acupuncture is an ancient Chinese medicine procedure in which thin metallic needles are inserted into precise points in the skin to create better balance and harmony in the body.<sup>2</sup> The precise physiologic mechanism by which acupuncture leads to pain reduction, blood pressure control, anti-emetic effect, mood im-

provement, anxiety relief and nasal decongestion is not well understood but the benefits are observed in individual patients and in some larger trials. A Cochrane review in 2010 identified six randomized controlled trials of acupuncture in Bell's palsy. Four of the six trials had a statistically significant outcome for Bell's palsy. The Cochrane authors, however, were not able to draw any conclusions about the efficacy of acupuncture because the primary objectives of "hastening recovery and reduced long-term morbidity" were not met.<sup>3</sup> Adverse events are rare and include bleeding, infection, pain, paresthesia, pneumothorax and hematoma. Limitations include access to an accredited clinic, insurance coverage and the financial resources needed to cover the cost of care.

Physical therapy is another treatment of long term dysfunction after ipsilateral idiopathic facial nerve palsy. A typical therapy regimen includes smiling, puckering, brow raising, frowning, squinting and raising the eyelids. Generally, the exercises are performed with 5-10 repetitions each three times daily. It is thought that passive movement of the paralyzed facial muscles with the hands reduces chances of long term synkinesis. While there are small studies that show some benefit with facial muscle exercises in the percentage of incomplete recovery at six months and facial disability, a Cochrane reviewed from 2012 concluded that there is no high quality evidence to support significant benefit or harm from physical therapy.<sup>4</sup>

The last non-pharmacologic treatment option is electrical stimulation (ES) therapy. ES works by delivery of low voltage electrical currents to affected areas in order to maintain and enhance muscle contractility. It is often used in conjunction with traditional physical therapy. ES has been studied in Bell's palsy and a small randomized controlled trial showed improved functional facial movements in ES plus physical therapy group.<sup>5</sup>

### *Conclusion*

The patient opted for a trial of home physical therapy exercises and acupuncture. The exercise regimen for his affected facial muscles was obtained after a brief internet search. He practiced them a few times a day along with acupuncture twice weekly. He returned to the office three months later and had a noticeable improvement in speech, smiling, and winking. He planned to

attend treatments for a minimum of six months based on the recommendations from his licensed acupuncturist.

## REFERENCES

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