



Case Report

Effect of Physiotherapy in the Management of Facial Palsy- Case Study

Sharick Shamsi

PhD Scholar (Physiotherapy), Maharaj Vinayak Global University, Jaipur, Rajasthan, INDIA

Received: 11/11/2014

Revised: 09/12/2014

Accepted: 13/12/2014

ABSTRACT

Facial palsy occurs from nervous input interruption at any of the facial nerve segments. Bell's palsy is an acute facial paralysis of unknown etiology. The initial physiotherapy evaluation was conducted 6 weeks following the onset of symptoms of left facial paralysis. At the time of the initial physiotherapy evaluation, the patient did not report any other active medical problems. The patient reported that his facial paralysis came on suddenly and was accompanied by pain in his left ear. There were no reports of an acute change for his left sided hearing loss accompanying his facial Paralysis. The physiotherapy evaluation further consisted of a qualitative analysis of his resting facial posture and neurological examination of the head and face, which revealed hypo-esthetic response to pinwheel testing in the three terminal branches of the left trigeminal nerve ((V1) ophthalmic, (V2) maxillary and (V3) mandibular. To assess self-reported disability at baseline and to monitor treatment progress, the patient completed the Facial Disability Index (FDI). The FDI is designed to provide the clinician with information regarding the disability as well as related social and emotional well-being of the patient. The FDI consists of two subscales; Physical function (items 1-5) and social well-being (items 6-10). The scores range from 0 (complete paralysis) to 100 (normal facial function). The FDI has shown to be reliable and valid as a clinical instrument and has been shown to accurately demonstrate the relationship between impairments, disability, and psychosocial status. Patient initial FDI score on initial evaluation was; Physical function subscale = 40/100; Social/Well-being subscale = 65/100.

Key Words: Facial palsy, Physiotherapy, Rehabilitation

INTRODUCTION

Facial palsy occurs from nervous input interruption at any of the facial nerve segments. [1]

Bell's palsy is an acute facial paralysis of unknown etiology. Bell palsy most commonly occurs between the ages of 15 and 60 years, with 15- to 44-year-olds experiencing the highest incidence. [2] Bell's palsy commonly affecting the motor neurones of facial muscles receiving their neurological innervations from the seventh

cranial nerve (the facial nerve) (Van Swearingen and Brach, 1998). Most patients' symptoms spontaneously resolve; however some patients continue to suffer in the long-term. Indicators for poor prognosis include complete facial palsy, no recovery of symptoms by three weeks, age over 60 years, severe pain, herpes zoster virus, co-morbid status e.g. hypertension, diabetes, pregnancy and severe degeneration of the facial nerve shown by electrophysiological testing. [3]

Most patients' symptoms spontaneously resolve however some patients continue to suffer in the long-term. The second cause is trauma. Among others, high blood pressure, diabetes mellitus, viruses, pregnancy are deemed conditions. The degree of facial nerve recovery depends on patient's age, lesion type, nerve nurturing, neuromuscular involvement and therapy installed. Facial nerve injury recovery may take weeks or up to four years. Facial palsy requires medical, physiotherapeutic, speech and hearing therapeutic approaches. ^[4]

The prognosis depends to a great extent on the time at which recovery begins. Early recovery gives a good prognosis and late recovery a bad prognosis. Recovery is less likely to be satisfactory with complete rather than incomplete paralysis, with pain behind the ear and in older people. ^[5]

CASE REPORT

The patient was a 35-year-old Man who was, diagnosed with Bell palsy of the left facial nerve and complete left facial paralysis. The initial physiotherapy evaluation was conducted 6 weeks following the onset of symptoms of left facial paralysis. At the time of the initial physiotherapy evaluation, the patient did not report any other active medical problems. The patient reported that his facial paralysis came on suddenly and was accompanied by pain in his left ear.

He was initially examined by physician who prescribed a course of anti-viral, oral steroids. Electrodiagnostic testing was not performed. He advised to continue to take oral steroid at the time of the initial physiotherapy evaluation but the anti-viral medication was discontinued due to lack of response in relation to his facial symptoms.

There were no reports of an acute change for his left sided hearing loss accompanying his facial Paralysis. The

physiotherapy evaluation further consisted of a qualitative analysis of his resting facial posture and neurological examination of the head and face, which revealed hypo-esthetic response to pinwheel testing in the three terminal branches of the left trigeminal nerve ((V1) ophthalmic, (V2) maxillary and (V3) mandibular. patient resting facial posture revealed severe asymmetry with a left sided droop. Voluntary movement of the left sided facial musculature was barely visible whereas the uninvolved right-sided facial musculature was clearly intact. The physiotherapist also performed active and passive cervical movement's with no significant findings in relation to the patient's facial symptoms or aberrant movements.

To assess self-reported disability at baseline and to monitor treatment progress, the patient completed the Facial Disability Index (FDI). ^[6] The FDI is designed to provide the clinician with information regarding the disability as well as related social and emotional well-being of the patient. The FDI consists of two subscales; Physical function (items 1-5) and social well-being (items 6-10). The scores range from 0 (complete paralysis) to 100 (normal facial function). The FDI has shown to be reliable and valid as a clinical instrument and has been shown to accurately demonstrate the relationship between impairments, disability, and psychosocial status. ^[6] Patient initial FDI score on initial evaluation was; Physical function subscale = 40/100; Social/Well-being subscale = 65/100.

Patient was a Military Man. He lived along with his family reported significant difficulty with drinking, eating, speaking and closing his left eye. These functional impairments were consistent with examination findings of synkinesis (abnormal movement of the face during a desired motion) for his left and right-sided muscles of facial expression e.g. smiling,

'puckering' and frowning. He also remarked on the need to continually use eye drops as well as performing manual closure of his left eyelid in order to relieve the symptoms of a dry, irritated left eye. These symptoms were consistent with the clinical presence of a positive Bell reflex on the left side (eye rolling backward during active eye closure) which prevented complete eye closure.^[7] He appeared motivated to improve his facial function with physiotherapy intervention.

It was initially decided that the patient would be seen two times per week for up to 6 weeks, with each session scheduled for one hour. Each session began with a brief re-evaluation of facial motor functioning e.g. active smiling, frowning, puckering' and eye closure.

Treatment: Electrical stimulation (ES), massage and exercises are used. Massage, which has frequently been prescribed for facial palsy,^[8] improves circulation and may prevent contracture. Active exercises (in front of a mirror) prevent muscle atrophy and improve muscle function. However, active facial muscle exercises cannot be performed in complete palsy.

Lowest current intensity could be used. ES of muscles aims at preserving muscle bulk especially in complete paralysis;^[9] and it has also a psychological benefit as the patient observes muscle contraction in his face that gives him hope for recovery from facial paralysis.^[9,10]

From the physical medicine point of view, the type of ES should depend on the pathology of the facial nerve. If there is no electrophysiological signs of muscle denervation (i.e. the facial nerve lesion is focal demyelination or neurapraxia), faradic stimulation or ES using 0.1-1 ms duration pulses delivered at a frequency of 1-2 pulses/s or more (e.g. transcutaneous electric nerve stimulation, TENS) may be given for 50-200 contractions/session, 2 sessions/week for 6 weeks.

Interrupted galvanic stimulation (IGS) of 100 ms rectangular pulses may be given at a rate of 1 pulse/s for 30-100 contraction/session. During each session, ES should be stopped once muscle fatigue occurs (i.e. it is not recommend to increase current intensity once fatigue occurs).

DISCUSSION

Features of successful outcomes for patients suffering from Bell's palsy are likely to be reliant on accurate diagnoses and appropriate followup with a team-oriented approach. Delivery of conservative, categorical physiotherapy care has provided evidence for successful outcome in some cases of patients with Bell Palsy (Brach and VanSwearingen, 1999;^[11] Beurskens and Heyman, 2003).^[12] In some cases, additional pre-testing may be of value in determining the aetiological features leading to the accurate diagnosis. For example electrophysiological nerve conduction study of the blink reflex in patients with Bell's palsy usually demonstrates prolonged latencies and/or absent early and late responses to stimulation (Kimura et al., 1976;^[13] Leon-Sarmiento, 2002).^[14] Physical therapy for patients with facial paralysis traditionally has consisted of generic facial exercises or electrical stimulation.^[15] Facial neuromuscular re-education techniques (i.e., the use of facial exercises to address a patient's impairments and functional limitations) are different from the traditional intervention for facial paralysis. In our approach, the exercise program changes over time as the patient's impairments change with recovery. The facial neuromuscular re-education exercise program emphasizes accuracy of facial movement patterns and isolated muscle control, and it excludes exercises that promote mass contraction of muscles related to more than one facial expression.

CONCLUSION

Disorders of the facial nerve, including paralysis, are not rare and have a variety of potential causes. The appropriate diagnosis and treatment are very important to achieving the best possible recovery of facial nerve function. Patients suffering from Bell's palsy may benefit from specific categorical physiotherapy treatments designed to improve physical functioning as well as social well-being. The use of the FDI should be advocated in determining the efficacy and progression of physiotherapy treatment of patients with Bell's palsy. It also provides objective evidence of functional improvement; evidence that is often required by third party payers.

Many clinical presentations have different etiologies despite symptom similarities, and caution should be exercised regarding patients having similar clinical presentations. Further clinical investigation and research with a larger population of patients is necessary before a more specific diagnostic/treatment regimen of this type can be recommended. In this regard, however, because of the paucity of available similar documentation in the professional literature, any comments and experiences that other clinical providers have experienced with this type of patient would be welcomed.

ACKNOWLEDGEMENT

I want to thank Mrs. Shabana Khan, Researcher at King Saud University, Riyadh Saudi Arabia, Dr Abhishek Yadav, Director of Raj Nursing Home, Gorakhpur, India, without their help this study would not have been possible.

REFERENCES

1. Vasconcelos BEC, Dias E, Dantas WRM, Barros ES, Monteiro G. Physical therapy in peripheral facial paralysis. *Brazilian J. of Otorhinolaryngology*, 2001;7(1): 13-20.

2. Jennifer S Brach and Jessie M Van Swearingen: Physical Therapy for Facial Paralysis: A Tailored Treatment Approach, *PHYS THER*. 1999; 79:397-404.
3. James M. Elliott, Physiotherapy treatment of Bell's palsy: A case report, *NZ Journal of Physiotherapy* – November 2006, Vol. 34 (3): 167-171.
4. Baida A. Bader, Effect of Physiotherapy on the Motor Recovery and Improvement in Patients with Facial Palsy. *Iraqi Sci. J. Nursing*, Vol. 23 (2), 2010.
5. Teixeira LJ, Soares BGDO, Vieira VP, Prado GF, Physical therapy for Bell's palsy (idiopathic facial paralysis) Review- The Cochrane Collaboration. Published by John Wiley & Sons, Ltd. 2008 Issue 3.
6. VanSwearingen JS, Brach JS. The facial disability index: 2. Reliability and validity of a disability assessment instrument for disorders of the facial neuromuscular system. *Physical Therapy* 1996; 76(12): 1288-1300.
7. Jelks GW, Smith B, Bosniak S. The evaluation and management of the eye in facial palsy. *Clin Plast Surg*. 1979; 6:397-419.
8. T. S. Shafshak, The treatment of facial palsy from the point of view of physical and rehabilitation medicine *EURA MEDICOPHYS* 2006;42:41-7.
9. Mysiw WJ, Jackson RD. Electrical stimulation. In: Braddom RL editor. *Physical medicine and rehabilitation*. 2nd ed. Philadelphia:WB Saunders Company; 2000. p.459-87.
10. Adour KK. Medical management of idiopathic (Bell's) facial palsy. *Otolaryngol Clin North Am* 1991;24: 663-73.
11. Brach JS, VanSwearingen JM. Physical therapy for facial paralysis: A tailored treatment approach. *Physical Therapy* 1999; 79(4): 397-404.
12. Beurskens CHG, Heymans PG. Positive effects of mime therapy on sequelae of facial paralysis: stiffness, lip mobility,

- and social and physical aspects of facial disability. *Otol Neurol* 2003; 24:677-681.
13. Kimura J, Giron LT, Young SM. Electrophysiological study of Bell palsy: electrically elicited blink reflex in assessment of prognosis. *Arch Otolaryngol* 1976; 102 (3):104-143.
 14. Leon-Sarmiento FE. Blink reflex and incomplete facial nerve palsy. *Arch Med Res* 2002;33(1):85-7.
 15. Waxman B. Electrotherapy for treatment of facial nerve paralysis (Bell's palsy). In: *Anonymous Health Technology Assessment Reports*. 3rd ed. Rockville, Md: National Center for Health Services Research; 1984:27.

How to cite this article: Shamsi S. Effect of physiotherapy in the management of facial palsy- case study. *Int J Health Sci Res*. 2015; 5(1):408-412.

International Journal of Health Sciences & Research (IJHSR)

Publish your work in this journal

The International Journal of Health Sciences & Research is a multidisciplinary indexed open access double-blind peer-reviewed international journal that publishes original research articles from all areas of health sciences and allied branches. This monthly journal is characterised by rapid publication of reviews, original research and case reports across all the fields of health sciences. The details of journal are available on its official website (www.ijhsr.org).

Submit your manuscript by email: editor.ijhsr@gmail.com OR editor.ijhsr@yahoo.com