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To study the effect of taping technique with conventional therapy in patients with facial palsy: A cross sectional study

Dr. Parveen Pathan
Assistant Professor, Department of Neuro Sciences, Shri. K.R. Pandav College of Physiotherapy, Bhandara, Nagpur, Maharashtra, India

Abstract
Aims & Objectives: To Study the Effect of Taping Technique with Conventional Therapy in patients with Facial Palsy
Sample size: 30 patients (25 in each group).
Study Design: Comparative Study,
Study setting: A teaching hospital with well-equipped medical and surgical intensive care unit and musculoskeletal department,
Sample and Sampling method: 30 patients were randomly selected and assigned in 2 groups, as Group 1(Control group), Group 2 (Study group) in equal numbers.
Inclusion Criteria: Subjects with age group 15-35 years, acute onset (1-3 week), Middle S/E status, Diagnosed case of Facial palsy, Non-traumatic onset, No other neurological deficit. Exclusion criteria Psychiatric illness, Subjects with age group below 15 & above 35 years, UMN lesion, Neurotmesis, Skin infection & open wounds, Hypersensitive skin, Skin Allergy to micropore Result PNF group (n=10) received Exercises with conventional physiotherapy treatment and Taping group (n=10) received combined Taping with conventional physiotherapy for 5 days a week for total 5 weeks. The demographics were recorded at baseline and at the end of intervention. Standardized assessment tools included House Brackmann Scale Qualitative Version
Results: The mean age of patients was 38.20±12.22 years with 11 (55%) males and 9 (45%) females. 60% patients had right side facial paralysis. Major improvement on facial disability index (95% Cl 2.94-24.95) was seen for Taping group as compared to PNF Group.
Conclusion: Taping technique with conventional exercise was more effective as compared to PNF Technique in Facial palsy patients.

Keywords: facial palsy, proprioceptive neuromuscular facilitation

Introduction

Peripheral facial palsy is the most frequent cranial Neuropathy and can originate from various kinds of damage to the seventh cranial nerve, including its motor nucleus [1-6]. Facial palsy is unilateral weakness or paralysis of the face due to acute peripheral facial nerve dysfunction with no readily identifiable cause and with some recovery of function within six month [2, 3, 6]. It is an acute disorder of the facial nerve, basically the lower motor neuron lesion in origin, which may begin with symptoms of pain in the mastoid region and produce total or partial paralysis of movement of one side of the face [4]. Facial palsy is the most common form of peripheral facial palsy in adults, with an annual incidence of 20-30 cases per 100,000 [3, 5, 6]. No gender, side, annual or seasonal differences have been noted in most Studies and no racial predilection has been established [6, 7]. The facial nerve is the seventh cranial nerve. The facial nerve is both a motor and a sensory nerve. The motor nerve of the face has 5 terminal branches (temporal, zygomatic, buccal, mandibular and cervical) emerges from the parotid gland and diverge to supply the various facial muscles. The trigeminal nerve is the sensory nerve of the face. Infra muscular lesion of the facial nerve leads to the facial muscles paralysis. Supra nuclear lesion of the facial nerve (usually part of hemiplegic), leads to lower part of the facial muscles paralysis [7, 8]. The incidence of facial paralysis is about 20/ 100,000 in a year or about 1/60 people in life time. Facial palsy has a peak incidence between the ages of 15 – 40 years and men and women are equally affected. The etiology for facial paralysis is idiopathic; most of the evidences support the viral etiology due to Herpes Simplex. Herpes Zoster or Epstein – Barr virus. Vascular ischemia may be primary or secondary. Primary ischemia is induced by cold or emotional stress. Secondary ischemia is the result of primary ischemia which causes increased capillary permeability leading to exudation of fluids, oedema and compression of micro circulation of the nerve [8, 9]. Pathologically the nerve may be affected by inflammation, compression, contusion, ischemia, stretching, section, application of excessive heat, cold, ultrasonic energy and local anesthetics [8]. Most Facial palsy patients recover well but persistent peripheral facial palsy can be devastating handicap, apart from negatively affecting facial appearance, asymmetry in facial muscles, and weakness of the facial musculature can result in difficulty in eating, drinking, speaking and conveying intimate human emotions

and communication signals [9, 10]. Disabling secondary defects also include disappearance of facial creases and nasolabial fold, the forehead unfurrows and the comer of the mouth droops. The eyelids will not close and the lower lid sags, on attempted closure, the eye rolls upward Eye irritation often results from lack of lubrication and constant exposure. Tear production decreases; however, the eye may appear to tear excessively because of loss of lid control, which allows tears to spill freely from the eye. Food and saliva can pool in the affected side of the mouth and may spill out from the corner. Patients often complain of a feeling of numbness from the paralysis, but facial sensation is preserved [10].

Material & Methodology

Study Type: Comparative
Sample Size: 30
Study Conducted: Pandav College of Physiotherapy, Bhilewada, Bhandara

Inclusion Criteria

- Subjects with age group 15-35 years
- Acute onset (1-3 week)
- Middle S/E status
- Diagnosed case of Facial palsy
- Non-traumatic onset
- No other neurological deficit

Exclusion criteria

- Psychiatric illness
- Subjects with age group below 15 & above 35 years
- UMN lesion
- Neurotmesis
- Skin infection & open wounds
- Hypersensitive skin
- Skin Allergy to micropore

Methodology

The subjects were divided into two groups namely group A & group B and matched on the basis of Age, Sex, and Severity of involvement. In Group A, Therapeutic intervention was done using taping technique. In Group B, Therapeutic intervention was done using Conventional treatment method. The duration of each session was kept constant for both the groups i.e. 40 minute each, 4 times a week. Treatment Protocol for Group A It included systematic & sequential approach towards taping.

Taping Protocol for Group A

Taping protocol is divided into 2 treatment phases

1. Facilitator Phase
2. Enhancement Phase

Treatment Protocol for Group B Conventional method for group B included Passive & Active exercises, passive stimulation, and facial massage. Re-evaluation was done after 8 weeks for both the groups using Facial grading scale for Resting symmetry & symmetry of voluntary movement, and performance in Functional activities was also assessed.

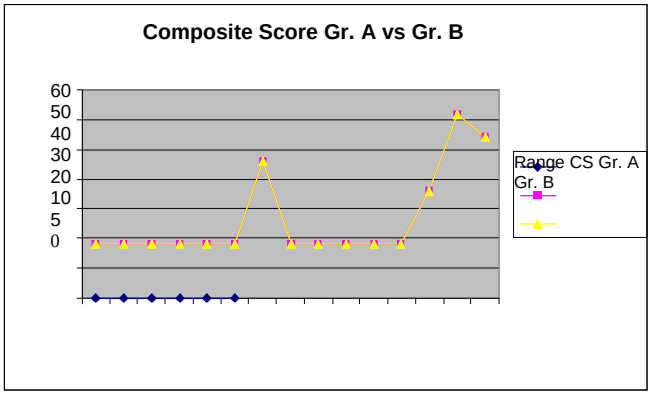

Fig 1: Composite score Gr. A vs G B group A

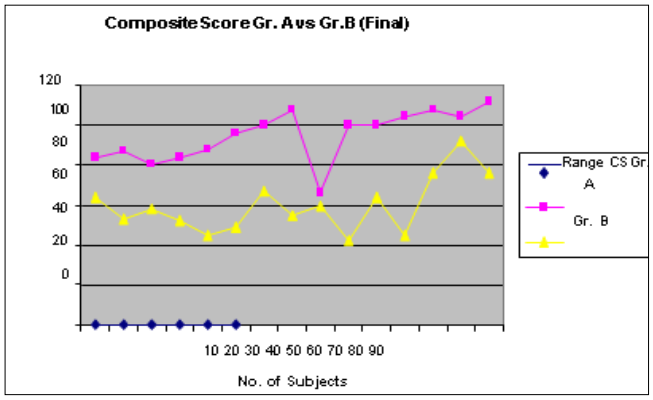

Fig 2: Composite Score Gr. A vs Gr. B

Result

Statistical analysis was done for within & between group analyses

PNF group (n=10) received Exercises with conventional physiotherapy treatment and Taping group (n=10) received combined Kinesio Taping with conventional physiotherapy for 5 days a week for total 5 weeks. The demographics were recorded at baseline and at the end of intervention. Standardized assessment tools included House Brackmann Scale Qualitative Version Results: The mean age of patients was 38.20±12.22 years with 11 (55%) males and 9 (45%) females. 60% patients had right side facial paralysis. Major improvement on facial disability index (95% Cl 2.94-24.95) was seen for PNF Group as compared to taping group. The Synkinesis assessment questionnaire for PNF group showed better outcomes after intervention ($p<0.05$). Conclusion: PNF group using Kabat exercises was more effective as compared to Kinesio Taping for the treatment of Bell's palsy.

Discussion

This study was conducted to compare the effectiveness of Facilitator taping techniques along with conventional Physiotherapy treatment in patients with facial palsy versus only conventional physiotherapy treatment in reducing the facial asymmetry in patients with facial palsy. The taping technique with conventional physiotherapy treatment demonstrated significant improvement in facial palsy than conventional physiotherapy treatment alone.

On comparison of pre and post test of Group A and Group B it was found that there was significant improvement in facial asymmetry of patients receiving Proprioceptive Neuromuscular Facilitation taping techniques. These finding are in accordance with Role of strujis *et al,* [5] physical rehabilitation in facial palsy: A randomized trial. Also group B shows improvement in facial asymmetry on comparison with pre and post scores. These finding is in accordance with Effects of electrical stimulation on House- [6] Brackmann scores in early Facial palsy.

When the mean values were compared Group A showed significant improvement in improving facial asymmetry than group B. hence this study proves that there is improvement and less time is taken in recovery of facial palsy with strujis techniques.

On the basis of analysis of result the alternate hypothesis stating that taping Technique is more effective than Conventional treatment protocol in subjects with facial palsy can be accepted & null hypothesis can be rejected. Although both taping technique & Conventional treatment protocol were effective for functional retraining but subjects in group A showed better functional recovery than group B in terms of facial symmetry, & ability to perform functional activities such as chewing, balloon blowing & speech. But taping protocol being more sequential, & systematic showed better results. Also The intricacy of movement that can be achieved by the facial muscles should preclude the use of maximum effort, gross exercises, where motor units other than those targeted are recruited due to overflow.

Basically taping helps to retrain paralyzed facial muscles by maintaining symmetry& facilitating paralzed muscles, thereby preventing over-activity of normal muscles & acts as a stabilizing mechanism by promoting desired symmetrical movement pattern that needs to be repetitively reinforced before it will be learned. Taping protocol is a problem solving approach to treatment using selective motor training to facilitate symmetrical movement and control undesired gross motor activity.

Conclusion

Taping protocol is more effective than conventional treatment for functional retraining in subjects with Facial palsy.

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