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Bell's palsy with Synkinesis: A case report

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Abstract

Bell's palsy is a type of facial paralysis that results in an inability to control the facial muscles on the affected side. Synkinesis is the result from miswiring of nerves after trauma. This result is manifested through involuntary muscular movements accompanying voluntary movements. A 43 year old female came with complaints of pain and weakness on the left side of the face along with involuntary movements on rt side of the face. Patient had past history of similar complaints on right side 18years back due to pregnancy. Physiotherapy treatment was given for 45mins/day for 5 days a week for 9 weeks. There were positive effects of the intervention on mmt, sd curve and house brackmann scale. After 9 weeks of intervention there were positive effects on bells palsy on the left side and synkinesis on the right side of the face.

Keywords: Bell's palsy, Synkinesis, House Brackmann'S scale, SD curve

Introduction

Bell's palsy is a type of facial paralysis that results in an inability to control the facial muscles on the affected side^[1]. Symptoms can vary from mild to severe.^[1] They may include muscle twitching, weakness, or total loss of the ability to move one or rarely both sides of the face.^[1] Other symptoms include drooping of the eyelid, a change in taste, pain around the ear, and increased sensitivity to sound^[1]. Typically symptoms come on over 48 hours^[1]. The cause of Bell's palsy is unknown^[1]. Risk factors include diabetes, a recent upper respiratory tract infection, and pregnancy^[1, 3]. It results from a dysfunction of cranial nerve VII (the facial nerve)^[1]. Many believe that this is due to a viral infection that results in swelling^[1]. Diagnosis is based on a person's appearance and ruling out other possible causes^[1]. The condition normally gets better by itself with most achieving normal or near-normal function^[1]. The eye should be protected from drying up with the use of eye drops or an eye patch^[1]. Surgery is generally not recommended^[1]. Often signs of improvement begin within 14 days, with complete recovery within six months^[1]. A few may not recover completely or have a recurrence of symptoms^[1]. Bell's palsy is the most common cause of one-sided facial nerve paralysis (70%)^[4, 5]. It occurs in 1 to 4 per 10,000 people per year^[2]. About 1.5% of people are affected at some point in their life^[5]. It most commonly occurs in people between ages 15 and 60^[1]. Males and females are affected equally^[1].

My patient Mrs. Meena Tapale of 43 years of age is a housewife came with the chief complaint of weakness on left side of the face since four months, her associated complaints were deviation of mouth towards right side, unable to close eyes and pooling of food and saliva on right side of the face since four months, involuntary movements on rt side of the face.

History- Mrs. Tapale was apparently alright four months back when she suddenly got a cold after which she experienced pain and weakness on the left side of the face, there was constant tearing from left eye and drooling of saliva. She did nothing for four months as she had similar complaints on the right side 18 years back and had taken no treatment as she was not aware of it. A family friend suggested for physiotherapy hence, the patient got admitted in pravara medical trust on 20th June, 2018.

Past history- she was a known case of bells palsy 18yrs back on right side due to pregnancy (during pregnancy, blood pressure is sometimes associated with pre eclampsia which affects in third trimester)

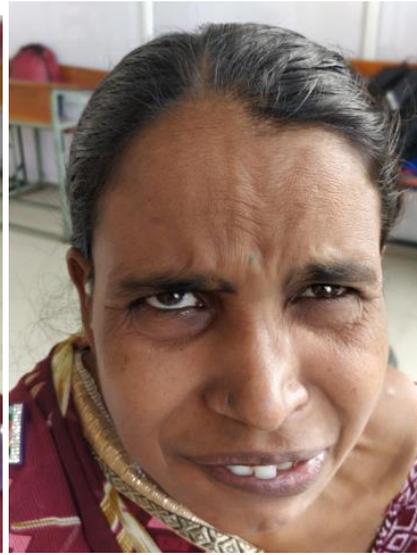
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Outcome measures- mmt (by jaqueline montgomery), House
Barckmann's scale and strength duration curve.
Investigation- MRI: Normal

S.D curve: partial denervation
House Brackmann's scale: grade 5



Img 1: frontalis



Img 2: corrugator



Img 3: orbicularis oris



Img 4: zygomaticus major

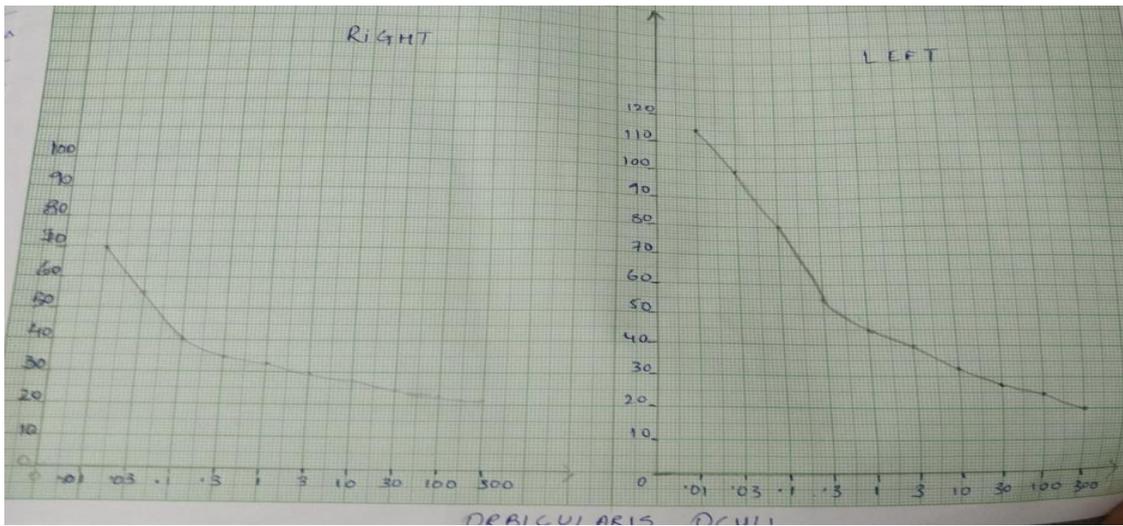


Img 5: Buccinator

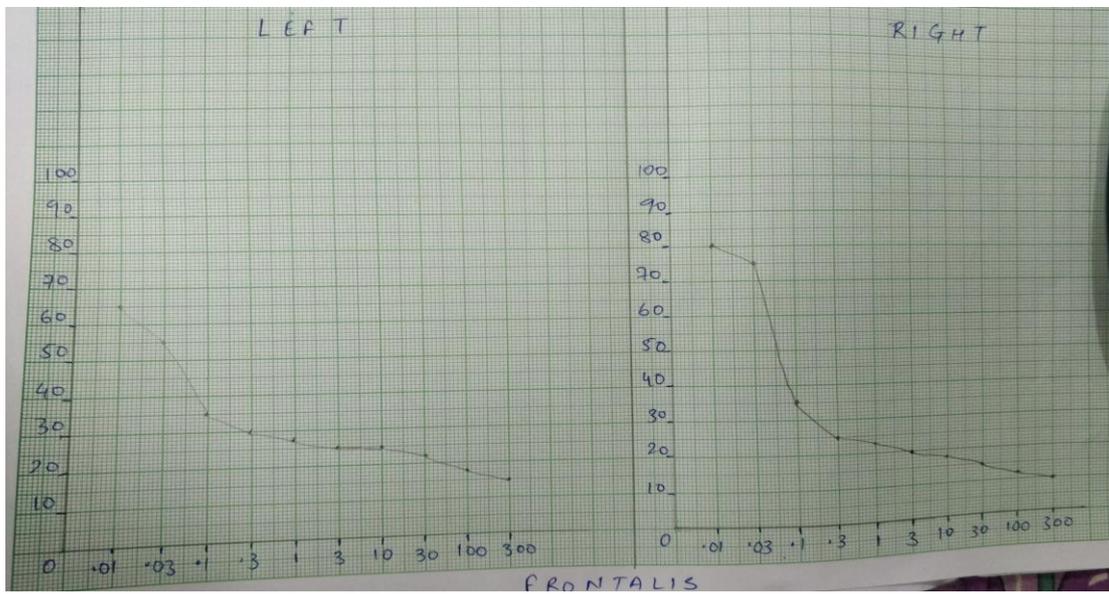


img 6: orbicularis oris

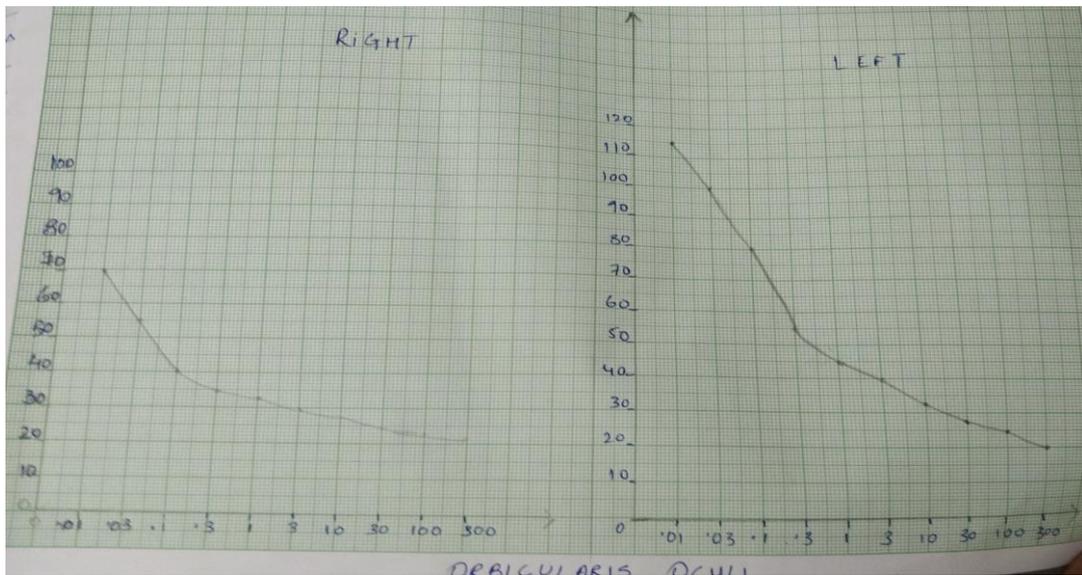
Strength Duration Curve



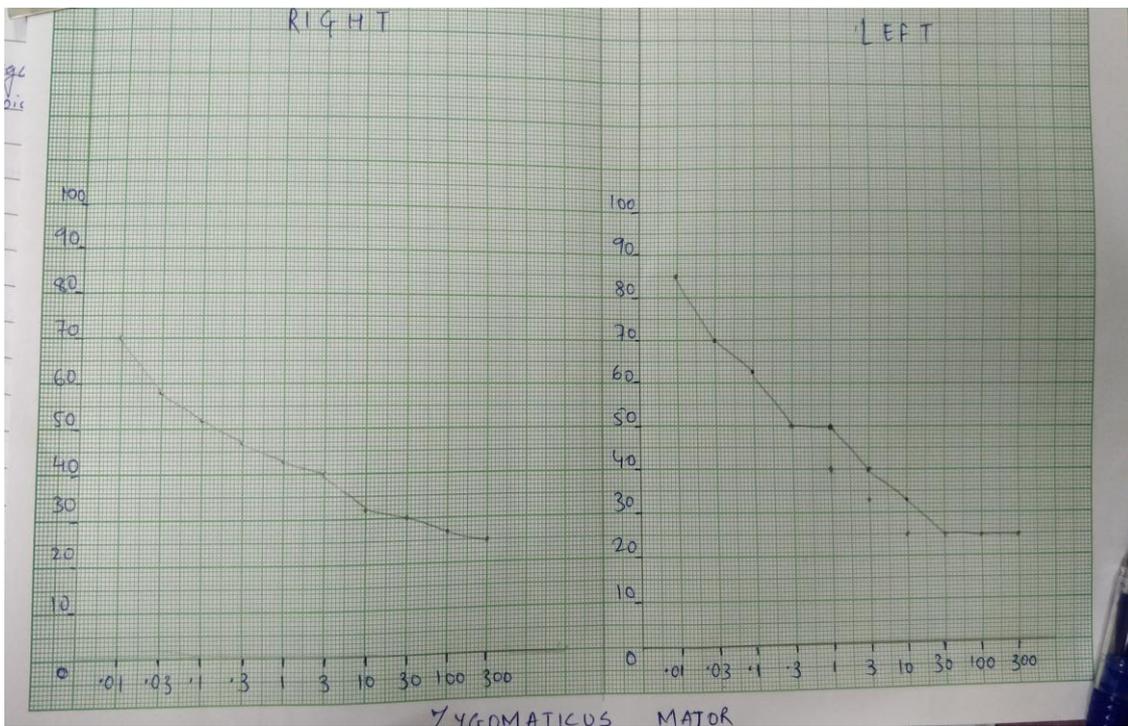
Img 7: Orbicularis oculi



Img 8: frontalis



Img 9: orbicularis oris



Img 10: zygomaticus major

Intervention: Before starting the intervention, a brief procedure about the treatment and its benefit was explained to the patient. An informed written consent was also obtained from the patient and permission was taken for using of her images. The study was carried out in the Neuro Physiotherapy department as per the patient’s admission and condition. Outcome Measures, mmt and house brackmann scale were used to assess on Day 1 and at the end of 10 weeks.

Management: Conservative management was done medical management given was Tab. Aciloc, Tab. Neurobion Forte, Tear plus eye drops. Physiotherapy management was given on the basis of problem list, short term and long term goals were planned. Initially the patient was educated about her condition, icing was done to stimulate the muscles around the cheek lips and tongue. ice helps in reducing the inflammation surrounding the fascial nerve. Efflurage was done to drain the lymphatic fluids and improve the circulation. Fascial muscle exercises were given in front of a mirror for visual feedback to strengthen the muscles of face. Intermittent galvanic muscle stimulation was given for 30 repetitions for each muscle to stimulate the muscles to

improve the strength and integrity of the muscles. Mime therapy was used to improve the integrity of the muscles. Relaxation exercises were done to avoid involuntary muscle contraction on the other side of the face.

Data analysis and results

Table 1: Mmt for left side

Muscle	pre	post
Frontalis	functional	functional
Corrugator	functional	functional
Orbicularis oculi	functional	functional
Orbicularis oris	Weak functional	functional
Buccinator	Weak functional	functional
Platysma	Weak functional	functional

Table 2: Mmt for right side

Muscle	pre	post
Frontalis	Weak functional	Functional
Corrugator	Weak functional	Functional
Orbicularis oculi	Weak functional	functional
Orbicularis oris	Non functional	Weak functional
Buccinator	Non functional	Weak functional
Platysma	Non functional	Non functional

Table 3: SD curve

Muscle	Left		right	
	Pre	post	pre	post
frontalis	innervated	innervated	Partially denervated	Partially innervated
Orbicularis oculi	Partially denervated	Innervated	innervated	innervated
Orbicularis oris	Partially denervated	innervated	Partially denervated	innervated
Zygomaticus major	Partially denervated	innervated	Partially denervated	Partially denervated

Table 4: House Brackmann scale

Lt side		Rt side	
pre	post	pre	post
Grade 5	Grade 1	Grade 4	Grade 2

Discussion

The aim of the study was to see the effect of conventional physiotherapy on a case of bells palsy with synkinesis over a period of 9 weeks. There were positive outcomes seen in the selected outcome measures of mmt, there was increase in

muscle strength as seen in the post test result. There was a positive influence on the nerves as seen that the pretest results showed partial denervation which then was innervated in the post test results. There was a positive change in house brackmann scale as it reduced from grade 5 to grade 1. The purpose of the study was to achieve muscle re-education and regain the strength. Physiotherapy is given for improving muscle strength, regaining integrity of muscles and most importantly to avoid secondary complications like synkinesis. It also helps in maintaining muscle tone of the affected fascial muscles and stimulate the facial nerve. Synkinesis is the result from miswiring of nerves after trauma. This result is manifested through involuntary muscular movements accompanying voluntary movements. For example, voluntary smiling will induce an involuntary contraction of the eye muscles causing the eye to squint when smiling. After the intervention there were positive changes on the right side but unlike left side normalcy wasn't achieved.

Conclusion

Physiotherapy intervention of facial massage, icing, mime therapy, kabat technique and facial muscle exercise with visual biofeedback had a positive effect on a case of bells palsy with synkinesis. Therefore, the study concludes that physiotherapy has a positive effect on bells palsy with synkinesis.

Limitation

As there is bilateral involvement sunnybrook facial grading scale could not be used to assess synkinesis.

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