



HOME REHABILITATION PROGRAM IN THE CASE OF BELL'S PALSY AT Dr.EFRAM HARSANA Hospital, ISWAHJUDI-Case Report

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Abstract

Introduction: Bell's palsy is a unilateral facial nerve with rapid onset of weakness or paralysis of unknown cause. The facial paralysis that occurs in Bell's palsy can cause significant transient oral incompetence and an inability to close the eyelids, leading to potential eye injury.

Case Presentation: The method used in this study is a case study. This case study was conducted at Dr. Efram Harsana Hospital with the patient Mrs. S with the age of 67 years.

Management and outcome: the provision of infrared, electrical stimulation, and mirror exercise is one of the effective methods to increase muscle strength and improve the functional ability of facial muscles.

Discussion: The IR application given to Bell's palsy patients will have a relaxing effect and help drain blood in the area. Giving electrical stimulation, namely electrochemical reactions, membrane permeability, reactions to motor nerves in the form of skeletal muscle contractions, increasing muscle strength, improving the vascular system and stimulating sensory nerves. This type of mirror exercise aims to increase facial muscle strength and increase facial functional ability activity.

Conclusion: Physiotherapy treatment in the form of IR, electrical stimulation, and mirror exercise can increase muscle strength and improve the functional ability of facial muscles.

Keyword : IR, *Stimulation Electrical* ,dan *Mirror Exercise*, *Bell'l Pals*



HOME PROGRAM REHABILITASI PADA KASUS BELL'S PALSY DI RSAU Dr.EFRAM HARSANA LANUD ISWAHJUDI - Laporan Kasus

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Preliminary

Bell's Palsy is an acute facial paralysis due to inflammation of the facial nerve (Saputra, 2009). This disorder is an idiopathic unilateral lower motor neuron (LMN) facial paralysis (Ginsberg, 2008). Bell's palsy usually occurs suddenly. The patient after waking up in the morning finds one side of his face asymmetrical. Mild initial symptoms such as tingling around the lips or dry eyes usually quickly become severe within 48 hours or less (Dewanto, et al, 2009).

In Bell's palsy patients, clinical signs and symptoms that arise on the ipsilateral side of the face such as facial muscle weakness, ipsilateral disappearing forehead wrinkles, looking like a tired person, unable or difficult to blink, stiff nose, difficulty speaking, difficulty eating and drinking, sensitive to sound (hyperacusis, excessive or reduced salivation, facial swelling, reduced or absent taste sensation, pain in or around the ear, and frequent salivation. Symptoms in the ipsilateral eye include difficulty or inability to close the ipsilateral eye, reduced tears) , falling eyebrows, lower eyelids falling, sensitive to light (Dewanto, et al, 2009).

Method

The method used in this study is a case study. This case study was conducted at Dr. Efram Harsana Hospital with the patient Mrs. S aged 67 years, Muslim with a retired elementary school teacher. Diagnosis: left bell's palsy.



Case Description

Subjective Examination

Around 07:00 WIB on February 15, 2021, the patient felt dizzy last night sleeping on the floor with the fan on. In the morning when he woke up the patient felt a thick patch on the left side of his face. The patient looks in the mirror and notices changes in the face with drooping lips to the right. That same day at around 09:00 WIB the patient went to the neurologist. From the neurologist, the patient was referred to physiotherapy at RSAU dr. Efram Harsana for therapy. The patient's condition is now no longer complaining of dizziness in the ear, the mouth is still drooping to the right, the left eye is still not completely closed, the eyebrows are still difficult to move, there is still a thick feeling on the left side of the face.

Past medical history: None

Family history: Hypertension

The goals to be achieved are to reduce the feeling of thickening on the left side of the face, increase the value of the strength of the left facial muscles, improve facial function and the potential for right side facial muscle spasm due to continuous contraction.

OBJECTIVE CHECK

Vital Sign Check

The physical examination carried out here starts from general examinations such as vital signs, to examinations that are specific to the case. Physical examination here is an important examination because it will help to establish a physiotherapy diagnosis.



This vital sign examination is also an important examination because from this examination it can see how the general condition of a patient is and to evaluate whether therapy can be carried out or not.

Table 1. Vital sign examination

Vital signs Category	Vital signs Category
Blood pressure: 150/100 mmHg Hypertension	Blood pressure: 150/100 mmHg Hypertension
Pulse: 75 x / min Normal	Pulse: 75 x / min Normal
Breathing : 22 x / min Normal	Breathing : 22 x / min Normal
BMI :30,7 Obesity	BMI :30,7 Obesity

The patient's general condition is still in good category so the patient can still continue therapy and do some exercises to reduce the disturbance experienced by the patient.

Inspection

Static: asymmetrical on the left side of the face, especially on the lips drooping towards the right, slightly reddish and watery eyes.

Dynamic: asymmetrical lips when smiling or speaking, drooping to the right, unable to completely close the left eye when blinking, no visible wrinkles on the left side of the nose.

Palpation

The local temperature is within normal limits, the left side of the face feels harder or feels stiffer than the left side.



Active motion check

- 1) Able to raise the left eyebrow, but still asymmetrical.
- 2) Able to close the left eye but still not perfect.
- 3) Able to move the left side of the mouth but still asymmetrical.
- 4) Able to whistle but still asymmetrical.
- 5) Able to move both eyebrows medially with minimal muscle contraction.
- 6) Able to inflate the nostrils with minimal muscle contraction.

Muscle test: the results of the examination of muscle strength can be seen in table 2.

Tabel 2. Pemeriksaan kekuatan otot

Nama Otot	Fungsi	Nilai
M. frontalis	Frown forehead	1
M. orbicularis oculi	Close eyes	3
M. zygomaticus mayor	Smile	1
M. orbicularis oris	Scream or whistle	1
M. procerus	Lifting the lateral edge of the nostrils	1
M. bucinator	Close your lips	1
M. depressor septi	Pull the nose down	1
M. corrugator supercilli	Move the eyebrows	1
M. nasalis	Develop deflate the lobes nose	1
M. depressor labii inferior	Pull the lips down	1
M. Mentalis	Pull up the tip of the chin	1
N. platysma	Stretch neck skin	1



It can be seen from the results of the examination above that the value of muscle strength 1 means that there is minimal contraction and the value of muscle strength 3 means that the contraction is up to the maximum normal side symmetrical.

Ugo Fisch . Scale

Assessment of the functional ability of facial muscles with the Ugo Fisch Scale. This scale aims to examine motor function and evaluate the progress of facial motor function in patients with Bell's palsy. The assessment was carried out in 5 positions, namely at rest, frowning, closing eyes, smiling, and whistling.

Table 3. Examination of the Ugo Fisch Scale

At rest or at rest 50 x 20% = 10	At rest or at rest 50 x 20% = 10
Frowning 40x 10% = 4	Frowning 40x 10% = 4
Closing eyes 70 x 30% = 21	Closing eyes 70 x 30% = 21
Smiling 30 x 30% = 9	Smiling 30 x 30% = 9
Whistling 30x 10% = 3	Whistling 30x 10% = 3
Total 47 points	Total 47 points

Under normal circumstances the sum of the five facial positions is 100 points. The results of the assessment are obtained from the assessment of the percentage number multiplied by each point. The final score is the sum of the 5 aspects of the assessment with a total of 46 points, including Grade IV: Moderately severe paralysis: 25 – 50 points.



Pain Check

Pain examination here uses the Verbal Descriptive Pain Scale (VDS) with the results as shown in Table 4.

Tabel 4. Verbal Descriptive Pain Scale (VDS)

Pain Classification Description	Pain Classification Description
Silent pain 0/10	Silent pain 0/10
Pain Press 0/10	Pain Press 0/10
Motion Pain 0/10	Motion Pain 0/10

Verbal Descriptive Pain Scale (VDS) results: 0, which means that you do not feel pain.

Physiotherapy Program Plan

The physiotherapy program given to the patient while in the physiotherapy poly is in accordance with the complaints felt by the patient after that the patient is given exercises to do at home to reduce complaints from these patients. The purpose of the physiotherapy program is to reduce the feeling of thickening on the left side of the face, increase the value of the strength of the left facial muscles, improve facial function and reduce the potential for spasm of the right side of the facial muscles due to continuous contractions. The table below is a planned physiotherapy program given to the patient.



Goal Dose Intervention	Goal Dose Intervention	Goal Dose Intervention
IR F : 3x/week	IR F : 3x/week	IR F : 3x/week
I : Patient threshold	I : Patient threshold	I : Patient threshold
T : 15 minutes Relax muscles, increase vascularization	T : 15 minutes Relax muscles, increase vascularization	T : 15 minutes Relax muscles, increase vascularization

Results

After undergoing therapy 6 times on a patient named Mrs. S aged 67 years with a diagnosis of Bell's Palsy Sinistra with the results obtained a reduction in the feeling of thickness on the left side of the face, an increase in muscle and basic functional such as raising eyebrows, closing the eyes, when the patient rinses his mouth. and eating is no longer leaking or falling, food is no longer collected on the left side, and the patient is able to drink using a glass.



The results of the thick-thick taste evaluation with the sensibility test can be seen in the image below:

SENSATION RATING		T0	T1	T2	T3	T4	T5	T6
Light touch	intact	intact	Intact	Intact	Intact	Intact	Intact	Intact
temperature	Intact	Intact	Intact	Intact	Intact	Intact	Intact	Intact
Taste Touch	decrease	decrease	decrease	decrease	decrease	Intact	Intact	Intact
Rough	decrease	decrease	decrease	decrease	decrease	Intact	Intact	Intact
Taste Touch	decrease	decrease	decrease	decrease	decrease	Intact	Intact	Intact
fine	decrease	decrease	decrease	decrease	decrease	Intact	Intact	Intact
Taste touch	decrease	decrease	decrease	decrease	decrease	Intact	Intact	Intact
blunt	decrease	decrease	decrease	decrease	decrease	Intact	Intact	Intact
Taste touch	decrease	decrease	decrease	decrease	decrease	Intact	Intact	Intact
sharp						Intact	Intact	Intact
Discrimination 2 point	Intact	Intact	Intact	Intact	Intact	Intact	Intact	Intact

Figure 1. Results of Thick-Thick Taste with Sensibility Test

Associated with the sensibility test that occurred in these patients experienced an increase which initially decreased after a long time there was a change in being able to feel as a whole. In the 5th and 6th therapy, the sensation of taste increased, namely being able to feel completely.



Movement	T ₀	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆
M. Frontalis	1	1	1	3	3	3	5
M. Corugator Supercili	1	1	3	3	3	5	5
M. Procerus	1	1	1	1	3	3	3
M. Orbicularis Oculi	3	3	3	3	3	3	5
M. Nasalis	3	3	3	3	3	3	3
Depressor anguli oris	1	1	1	1	3	3	3
M. Zygomaticus Major	1	1	3	3	3	3	3
M. Zygomaticus Minor	1	1	1	3	3	3	3
M. Orbicularis Oris	1	1	1	3	3	3	3
M. Buccinator	1	1	3	3	3	3	5
M. Mentalis	1	1	1	1	3	3	3
M. Risorius	1	1	1	1	3	3	3

Figure 2. Evaluation results of facial muscle strength T0-T6 with facial MMT

The results of the evaluation of facial muscle strength during therapy 6 times there was an increase, the increase was seen in therapy 4, 5, 6 with results in strength of 3 (Contractions up to maximal normal side symmetrical) and 5 (Full, controlled and symmetrical contractions).

Face Position	T ₀ (01.02.11)	T ₁ (02.02.11)	T ₂ (03.02.11)	T ₃ (04.02.11)
Rest/ Silence	50 x 20% = 10	50 x 20% = 10	80 x 20% = 16	80 x 20% = 16
Frown forehead	40 x 10% = 4	40 x 10% = 4	60 x 10% = 6	60 x 10% = 6
Close eyes	70 x 30% = 21	70 x 30% = 21	80 x 30% = 24	80 x 30% = 24
Smile	30 x 30% = 9	30 x 30% = 9	30 x 30% = 9	30 x 30% = 9
Whistling/ Whistling	30 x 10% = 3	30 x 10% = 3	40 x 10% = 4	40 x 10% = 4
Amount	47 poin	47 poin	59 poin	59 poin



Face Position	T ₄ (05.02.11)	T ₅ (06.02.11)	T ₆ (07.02.11)
Rest/ Silence	80 x 20% =17	80 x 20%=17	90 x 20% = 18
Frown forehead	50x10%= 8	50x10%= 8	10x30%= 9
Close eyes	80x30%= 24	80x30%= 24	30x70%=24
Smile	30x30%= 10	30x30%= 10	40x30%=12
Whistling/ Whistling	30x10%= 4	30x10%= 4	40x10%= 4
Amount	63 poin	63 poin	67 poin

Assessment of the functional ability of facial muscles with the Ugo Fisch Scale. This scale aims to examine motor function and evaluate the progress of facial motor function in patients with Bell's palsy. The functional ability of the facial muscles increases with each therapy. The ability of facial muscles has the highest points in the 6th therapy.

Discussion

Bell's palsy is a lower motor neuron disease that affects the peripheral facial nerve (N.VII), which has an idiopathic etiology and is characterized by unilateral upper and lower facial paralysis. The occurrence of this incident is acute (48 hours) and is often accompanied by posterior auricular pain, decreased tear secretion and impaired taste sensation.

Until now, the cause of bell's palsy is still unknown, according to Pranata (2008) the cause of bell's palsy is cold wind that enters the stylomastoid foramen causing the facial nerve to become swollen and then swollen. This swelling of the facial nerve causes the blood supply to the nerve to be blocked. This causes ischemic and even necrosis so that the function of conducting impulses or stimulation is disrupted and causes facial paralysis of the lower motor neuron type. Symptoms of Bell's palsy can include paralysis of the facial muscles on one side, complaining of pain around the ear, swelling or stiffness in the face even though there is no disturbance.



sensory. It is sometimes followed by hyperacusis, reduced tear production, hypersalivation and altered taste. (Munilson et al, 2012).

The increase in facial muscle strength in the case of Bell's palsy is most likely influenced by the provision of faradic and mirror exercise modalities. Faradic itself provides stimulation to the mitiris nerve so that an axin potential occurs in the nerve fibers, causing repeated and voluntary muscle contractions in individual facial muscles which aims to retrain muscle work and function and trigger pumping action with the aim of smoothing vascular circulation and ultimately occurs. increase in muscle strength (Sujatno et al, 2002). Mirror exercise aims to control movement and increase muscle strength. The implementation of this exercise is in principle an exercise that is carried out actively and repeatedly so that due to voluntary movement it can increase muscle strength and facial function (Widowati, 1993). The decrease in pain in patients with Bell's palsy is possible because of the influence of the infra red modality. Therapeutic effects resulting from the provision of infrared include reducing or eliminating pain, muscle relaxation, increasing blood supply and eliminating metabolic waste products (Sujatno et al, 2002). The functional improvement of the facial muscles in the case of Bell's palsy is due to the faradic and mirror exercise modalities. Both modalities provide the effect of increasing facial muscle strength. With an increase in facial muscle strength, the functional ability of the face will also increase. From the three results above, it can be concluded that the application of physiotherapy modalities in the form of infrared, electrical stimulation with faradic and exercise therapy with mirror exercises and education can help the process of repair/healing in Bell's palsy conditions, including increasing muscle strength and functional ability in muscles - facial muscles.

Conclusion

Based on the analysis of the problems mentioned above and adjusted to the patient's condition, the physiotherapy modalities that can be given are infra red, electrical stimulation with faradic and exercise therapy with mirror exercise and education. From the application of these modalities 6 times, it can be concluded that the application of infrared, electrical stimulation with faradic and exercise therapy with mirror exercises and education can help speed up the healing process and improvement in this left bell's palsy.



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