

# Management of Physiotherapy in Case of Brachialgia Due to Cervical Spondyloarthritis

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**ARTICLE INFO**

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**ABSTRACT****Keywords:**

Management,  
Physiotherapy,  
Brachialgia,  
Spondyloarthritis,  
Cervical

This patient complains of pain in the neck and radiates to the shoulder, the possibility of abnormalities in the brachial plexus, the disorder can be caused by a narrowing of the foramen causing compression or it can also be caused by a tumor pressing on the nerve. Lesions on the vertebrae have different effects. Depends on the degree of which segment is affected. In the assessment of physiotherapy, the examination process to determine the patient's problems begins with anamnesis, examination, and continues with determining the diagnosis of physiotherapy. Anamnesis is divided into two, namely general history and specific history. Cervical spondyloarthritis is a condition of the degeneration of the intervertebral discs and the connective tissue of the joints between the vertebrae. Degeneration causes the disc to begin to thin because its ability to absorb water is reduced, resulting in a decrease in the water content and the matrix in the disc decreases. Degeneration that occurs in the disc causes the disc function as a shock absorber to disappear then osteophytes will arise which causes pressure on the roots, spinal cord and ligaments which in turn causes pain and causes decreased mobility.

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## 1. Introduction

Spondyloarthritis is a condition in which degenerative changes occur in the intervertebral joints between the bodies and discs. Spondyloarthritis is part of osteoarthritis which can also produce degenerative changes in the synovial joints so that it can occur in the apophyseal joints of the spine. Clinically, these two degenerative changes occur simultaneously. Cervical spondyloarthritis is a condition of the degeneration of the intervertebral discs and the connective tissue of the joints between the vertebrae. In this case physiotherapy treats a 48 year old female patient complaining of pain in the neck and left shoulder, where there are several possibilities that can cause these complaints, which can be caused by pathology of the joints, soft tissues and can also occur due to nerve compression. In this patient the pain is felt to get worse when the patient moves the hand, this can be caused by foraminal compression. The patient also described a history of neck disease (Cervical Spondyloarthritis). This patient complains of pain in the neck and radiates to the shoulder, the possibility of abnormalities in the brachial plexus, the disorder can be caused by a narrowing of the foramen causing compression or it can also be caused by a tumor pressing on the nerve. Lesions on the vertebrae have different effects. Depends on the degree of which segment is affected. One example is brachialgia disorder due to clamping or compression of the nerves that exit through the cervical vertebrae. This disturbance will have an impact along the path of the affected nerve, in this case the affected part is the arm. Symptoms can be felt from the shoulder to the fingers. Brachialgia is a condition that can be caused by pathology of the joints, soft tissues or due to nerve compression. If it is caused by nerve compression, the pain will radiate according to the dermatome. If the affected C2 (between C1 and C2) will usually cause pain in the ear. At a more distal compression, namely at C5, the pain will radiate to the shoulder. At C6, the pain will radiate to the more posterior arm, which can involve the little finger.

## 2. Methods

### 2.1 Data Assessment

In the assessment of physiotherapy, the examination process to determine the patient's problems begins with anamnesis, examination, and continues with determining the diagnosis of physiotherapy. Anamnesis is divided into two, namely general history and specific history. 1. Special History Anamnesis is an examination action that is carried out by holding questions and answers to the patient directly (autoanamnesis) or by holding questions and answers to the patient's family directly (heteroanamnesis) regarding the condition or condition of the patient's disease. By doing this anamnesis will be obtained important information for diagnosis. In this case, based on autoanalysis on July 20, 2020, the following information was obtained:

### 2.2 Patient Identity

Name : Mrs. N

Age : 48 years

Female gender Islam

Education : S1 Occupation

Housewife Address : Jln. Guarantee Ginting MRS : 20/07/2020

Nursing Ward: Kerinci RM

Number : 0219853

- a. Main complaint A 48-year-old woman came with complaints of neck and shoulder pain since 1 week since admission to the hospital. Initially the patient only complained of stiffness in the neck which gradually spread to the left shoulder and became painful. The pain is felt when the patient moves his hand. In addition, the patient also feels dizzy. The complaints felt by the patient did not improve with rest and the patient was unable to carry out daily activities without the help of others.
- b. Current medical history The patient came to the Efarina Berastagi Hospital polyclinic on Monday, January 20, 2020 with a complaint that the patient felt stiff in the neck after the patient fell asleep on a thin mattress at home, this complaint made the patient unable to carry out daily activities without the help of others. 2 weeks since his admission to the hospital, he felt stiff radiating to the left shoulder.
- c. Past medical history Previously, the patient had experienced cervical spondyloarthritis.
- d. Family history of illness The patient's family does not have a history of the same disease as the patient, because this disease is not a hereditary disease.

### 2.3 Physiotherapy Diagnosis

#### a. Impairment

- 1) Neck pain The main symptom is usually pain in the back of the neck or the surrounding area (trapezius m.). The onset of pain occurs slowly although sometimes it occurs suddenly. Sometimes the pain radiates to the shoulder or upper arm and can also involve the upper cervical region causing occipital pain.
- 2) Neck stiffness (stiffness) Neck stiffness begins in the morning and gets worse with activity. Neck movement is limited and sometimes accompanied by crepitus and pain.
- 3) Tingling In general, tingling occurs in the fingers. Here the localization is very important, because from the localization it can be concluded at which level the neural structure is stimulated.
- 4) Limited range of motion of joints On examination, it is not uncommon for the neck to experience limitations in its range of motion and usually the patient also feels it with or without neck pain. Neurologic abnormalities, to the spinal nerve roots will interfere with sensibility and motor skills.

#### b. Functional Limitations

Functional limitation is a problem in the form of a decrease or limitation in carrying out functional activities as a result of an impairment such as difficulty squeezing cloth, combing hair, and putting on a bra.

#### c. Participation Restriction

Participation Restriction is a problem in the form of inhibition or inability of patients to return to activities related to their original work, socialization activities with the community as a result of impairments and functional limitations, in the form of decreased ability to do physical activities and the social environment. In this case, the patient had no difficulty in carrying out worship and community service activities.

**Table 3**  
Physiotherapy modalities in cases of brachialgia

NO	type	method	dose	description
1	Modalitas TENS	Analgesia	-nyeri I: Arus bi-symm Fase durasi	To reduce pain in the should
		Analgesia sensori (Ko-planar dan Kontra-planar)	- Frekuensi : 160 Hz Modulasi : 65Hz D : 15 meni F : 6 x terapi (seminggu 3 x)	Frekuenreduce taste tingling in the a
2	Modalitas US	Kontak langsung	I : Transducer 1MHz continuous I : 1.70 w/cm <sup>2</sup> D : 6 menit F : 6 x terapi (seminggu 3 x)	To reduce pain and release a shoulder tissue.
3	Exercise	<b>Neck Calliet</b> (Isometric contraction and Stretching Upper Trapezius)	: 10 x repetisi (6 h) D : 10 menit F : 2 x / hari	Reduces muscle spasm, mai increases neck muscle increase and menjaga LGS,

### 3. Results and Discussion

#### 3.1 Physiotherapy administration method

Physiotherapists select interventions based on the complexity and severity of the problem. The physiotherapist selects, applies or modifies one or more intervention procedures based on the ultimate goals and expected outcomes that have been developed for the patient.

##### a. TENS . modalities

TENS is an electrical stimulation device, meaning a device that converts an electric current into stimulation for therapy. TENS provides electric current with an amplitude of up to 50mA with a frequency of 10-250Hz, widely used for pain reduction therapy.

##### b. US modalities

The shape of the ultrasound wave is longitudinal. Ultrasound therapy is a therapy using mechanical vibrations of sound waves with a frequency of more than 20,000 Hz, which is used in physiotherapy is 0.5 MHz-5MHz with the aim of causing a therapeutic effect.

##### c. Neck Calliet Exercise OS

Position: Sit relaxed on the bench Therapist position: Close to OS

##### d. Programs For At Home

Programs given to patients to do at home. The program provided must be in accordance with the conditions, abilities, cases, and easy to do. The program provided also includes proper body mechanics so that patients do not experience more severe injuries.

### 4. Conclusion

Cervical spondyloarthrosis is a condition of the degeneration of the intervertebral discs and the connective tissue of the joints between the vertebrae. Degeneration causes the disc to begin to thin because its ability to absorb water is reduced, resulting in a decrease in the water content and the matrix in the disc decreases. Degeneration that occurs in the disc causes the disc function as a shock absorber to disappear then osteophytes will arise which causes pressure on the roots, spinal cord and ligaments which in turn causes pain and causes decreased mobility. Spasm of the cervical muscles can also cause pain because ischemia of these muscles compresses the blood vessels so that blood flow will slow down and there is also a decrease in tissue mobility/tolerance to a stretch. All of the above factors will cause a decrease in the range of motion of the cervical joints. In this case, brachialgia is caused by cervical spondyloarthrosis affecting C4, C5, C6 which causes excessive pain and tingling along the right arm, so the OS requires relaxation in the form of TENS modality with the coplanar method, 2 channel, bi-symm current and using pain and sensory analgesia. and US modalities and neck stretching exercises. With the hope of pain in the shoulder and excessive tingling and tissue adhesions that the OS feels are reduced.

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