

The Effectiveness Of Addition Nelson Traction On Microwave Diathermy (MWD) Intervention And Transcutaneous Electrical Stimulation (TENS) For Upper Thoracal Joint Blockade Pain Reduction.

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Abstract

This research aims to determine the effect of Nelson Traction combined with the provision MWD and TENS on pain reduction upper thoracal result of joint blockade. The sample of 10 people who were divided into age and gender were used in this research. This study was quasi experimental in the treatment compare before and after therapy MWD+TENS+Nelson Traction. Measuring tool used was Visual Analogue Scale (VAS). The effect therapy was reduced blood circulation, relaxation of muscle, pain reduction in the level of sensory, spinal level and in the supra spinal level and also obtained another effect that was opening joints that locked, restore nucleus anteriorly, stretching muscles and ligaments, widening the intervertebral foramen, and reduced disruption of respiration especially during inspiration. Statistical data were processed and analysed by wilcoxon match pairs and Mann-Whitney method by SPSS software tools. There was found that the pain were reduced significantly between before and after intervention reach to 26.70 VAS and P value 0,005 (P < 0,05).

Keywords

Nelson Traction, Joint Blockade, pain, MWD, TENS

1. INTRODUCTION

According to Rene Caillet 80 % population had never felt pain throughout their lives regardless of gender, age, social level, and the profesi. In his book Mc. Kenzie said the back pain is divided into upper back pain and lower back pain. Judging the aspects of biomechanics. The cause of back pain is divide into errors postural in the long term and kinetic back pain is pain that arises due to abnormalities or errors postural can be experience by anyone for example a student who has habit of writing by means of bending his back, a man who worked at in front of the computer by means of bending caused due to the high table computer that does not comply with chairs.

Based on the declaration of WCPT (World Confederation Physical Therapy) in Yokohama, physiotherapy is integral part of the health care profession which are addressed to individuals and groups to development, maintainance, and restore movement and fuction of the body throughout their life cycle of using techniques MWD,SWD,TENS,IIR, ULTRA SOUND, Massage, exercise therapy, and manipulation methode such as Nelson Traction.

Some cases of back pain also combine with joint blockade which is needed to release back with manual therapy. In this research we will focus on addition of manual therapy Nelson Traction Methode effectiveness in reduction of back pain and combine this methode with MWD - TENS therapy.

## 2. THEORY

Back pain is a pain in the back. Episodes of back pain may be acute, sub-acute, or chronic depending on the duration. The pain may be characterized as a dull ache, shooting or piercing pain, or a burning sensation. The pain may radiate into the arms and hands as well as the legs or feet, and may include paresthesia (tingling with no apparent cause), weakness or numbness in the legs and arms. The anatomic classification of back pain follows the segments of the spine: neck pain (cervical), middle back pain (thoracic), lower back pain (lumbar) or coccydynia (tailbone or sacral pain) with the lumbar vertebrae area most common for pain and some times can be difficult to breath.

### 2.1 Anatomy and Fisiology Of Trunk

The totally of trunk is described in figure 1 which consist of 33 bones, particularly cervikal 7, thoracal 12, lumbal 5, sacral 5, cocygeus 4-5 bones.

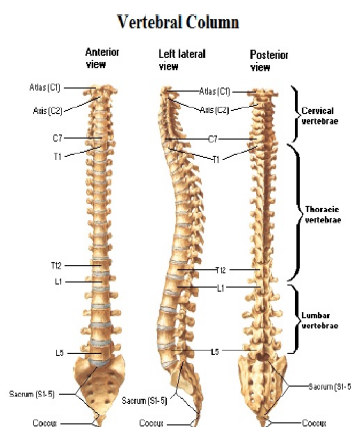


Figure 1. Human's trunk anatomy

The trunk work as stabilizers of body and there is many muscles in the trunk.

## 2.2 Facet Joint Anatomy

The facet joints are paired joints in the back and neck, one pair at each vertebral level (one joint on each side of the vertebrae). These joints have opposing surfaces of cartilage (cushioning tissue between the bones) and a surrounding capsule that is filled with synovial fluid, which reduces the friction between bones that rub together.

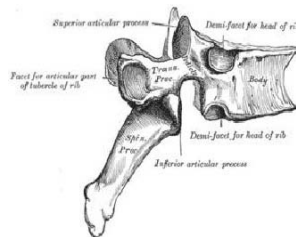


Figure 2. Facet Joint Anatomy

## 2.3 Joint Blockade on Thoracal Joint

At one the time a joint occur locking is a condition that occurs in the joint that have a meniscus uch as the spinal facet joint. In this research about joint blockade in facet processus transversus inferior cervical 7 and facet precesesus tranversus superior in thorakal 1 until thoracal 12.

Joint blockade will occur cause poor postur, antero postero cercical, kiphosis . *Thoracic facet joints.* pain caused by thoracic facet joints (in the upper spine) is typically felt in the upper back, chest, and/or arm (rarely).

How to know the joint is blockade? there is special exmination to know it. It's examination is PACVP (Postero Anterior Central Vertebral Pressure). If there is hurt when PACVP done and the pysical therapis feel firm end feel in the last examination it positif joint blockade.

## 2.4 Visual Analogue Scale (VAS)

VAS is measuring the intensity and type of pain, with use line 10 cm to describe intensity of pain. It's start zero pain, middle pain, and sore pain.

## 2.5 Micro Wave Diathermy (MWD)

It's a therapy method to use stressor fisis electromagnetic resulting from current frecuency 2450MHz with waves lengths 12,25cm.

## 2.6 TENS

Transcutaneous Electrical Nerve Stimulation (TENS) it's one of therapy method that use electricity in stimulation nerve sensori and it will reduce pain through gate control theory.

TENS has the form of monophasic, biphasic, and polyphasic. Monophsic has the form retrangular, trianguler, and half sine wave in the direction of the biphasic while

in the polyphasic pattern there is a series of sine waves and the form of interference or mixed.

#### 2.7. Nelson Traction

It's manipulation method which use to open facet joint locked. The effect of therapy can open joints that locked, restore nucleus anteriorly, stretching muscles and ligaments, widening the intervertebral foramen, and reduced disruption of respiration especially during inspiration.

### 3. METHODE

This Research metode utilize quasi experimental and Statistical data was processed and analysed by wilcoxon match pairs and Mann-Whitney method, compare before and after therapy MWD+TENS+NELSON TRACTION, and calculation with SPSS 2000 program. This research have been done in Navy Hospital Mintohardjo West Jakarta.

### 4. RESULT AND ANALYSIS

This research implement on 10 person consist of 2 men and 8 women. Below table 1 show distribution of sample by gender.

Tabel 1. Distribution sample by gender

Gender	Sample	P
	N	%
Man	2	20
Woman	8	80
Totally	10	100

While sample distribution by age is described in table 2.

Tabel 2. Distribution sample by Age

Age (Years)	Sample	P
	N	%
20-27	1	10
28-35	2	20
36-43	3	30
44-51	3	30
52-58	1	10
59-65	0	0
Totally in persen	10	100%

After being given MWD+TENS+Nelson Traction therapy there were reduction pain result on thoracal joint because of joint blockade. The result can be seen in table 3.

Tabel 3. Relief of pain before and after therapy

Sample	Before	After	Change
1	50	3	47
2	55	28	27
3	39	16	23
4	48	46	2
5	58	25	33
6	39	35	4
7	62	39	23
8	50	20	30
9	90	24	66
10	51	39	1
Mean	54,20	27,5	26,70
SD	14,543	12,782	19,368

Statistical data were processed and analysed by wilcoxon match pairs and Mann-Whitney method. There were found that the pain were reduced significantly between before and after intervention reach to 26.70 VAS and P value 0,005(P <0,05).

## 5. CONCLUSION

There were some positif change effect therapy MWD+TENS+NELSON TRACTION before and after intervention to reduce pain caused by joint blockade upper thoracal with reach to 26.70 VAS and P value 0,005(P <0,05).

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