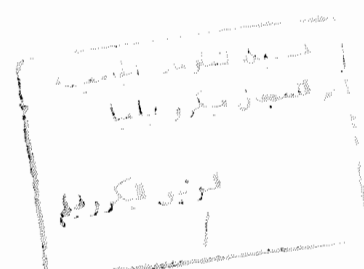


VALUE OF MOTOR POINT ANAESTHETIC INFILTRATION AS AN ADJUVANT TREATMENT OF SPASTICITY

THESIS

Submitted for Partial Fulfillment of Master Degree in
Physical Medicine and Rehabilitation

By
Manar Ahmed Azab
M.B., B.Ch.
Ain Shams University



Under Supervision of
Prof.Dr. Mohamed Gamal El-Din Zaki
Professor of Physical Medicine and Rehabilitation
Faculty of Medicine
Ain Shams University

615.8
M. A

Dr. Mahmoud El-Tayeb Nasser
Ass.Prof.of Physical Medicine and Rehabilitation
Faculty of Medicine
Ain Shams University

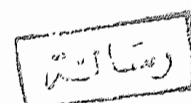
50761

Dr. Mervat Abd-El-Hakim
Lecturer in Physical Medicine and Rehabilitation
Faculty of Medicine
Ain Shams University



ش. م. م. م.

FACULTY OF MEDICINE
AIN SHAMS UNIVERSITY
1994



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

(... قال رب اشرح لي صدري
ويسر لي امري واجل عقرة
من لساني يفقهوا قولي ...)

صدق الله العظيم

سورة طه آية ٢٥-٢٧



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

(... قال رب اشرح لي صدري
ويسر لي امرى واحلل عقدة
من لساني يفقهوا قولى ...)

'صدق الله العظيم'

'سورة طه آيه ٢٥-٢٧'

*To everyone taught me a letter,,
To my parents...
To my husband...*

*To everyone taught me a letter,,
To my parents...
To my husband...*

Acknowledgment

I would like to express my sincerest gratitude, all appericiation, utmost respect to Prof. Dr. Mohamed Gamal El-Din Zaki, Professor of Physical Medicine and Rehabilitation Department; Ain Shams University, for his kind help, guidance, and encouragement throughout the course of this work.

I would also like to have the pleasure of thanking Dr. Mahmoud El-Tayeb Nasser, Assistant Professor of Physical Medicine and Rehabilitation Department; Ain Shams University, for whom I owe a very special form of appreciation for the time he gave to me and his fatherly encouragement and supervision.

I do feel greatly indebted to Dr. Mervat Abd-El-Hakim, Lecturer in Physical Medicine and Rehabilitation Department; Ain Shams University for her kind guidance, for her patience and her continuos help in the work.

Last but not least I wish to extend my thanks to all the staff members of the Physical Medicine and Rehabilitation Department; Ain Shams University, for their encouragement and help in achievement of this work.

CONTENTS

	Page
Introduction	1
Aim of the work	3
Review of literature:	4
• Physiology of Spasticity	4
• Pathophysiology of Spasticity	20
• Causes of Spasticity	25
• Clinical picture of Spasticity	30
• Hazards of Spasticity	35
• Treatment of Spasticity:	38
- Physical	39
- Medical	43
- Surgical	46
- Chemical	51
Patients and Methods	57
Results	66
Discussion	83
Summary and Conclusion	92
References	95
Arabic summary	---

Index of Tables, Figures and Pictures:

	Page
Table (1): Distribution of patients according to age and sex.	68
Table (2): Distribution of patients according to cause and duration of illness.	68
Table (3): Distribution of patients according to selected muscle group.	70
Table (4): Number of patients in each grade before and after treatment.	70
Table (5): Comparison between PROM of group I & group II before and after treatment in ankle joint	72
Table (6): Comparison of PROM in group I & group II before and after treatment in ankle joint.	72
Table (7): Comparison between PROM of group I and Group II before and after treatment in wrist joint.	74
Table (8): Comparison of PROM in group I and group II before and after treatment in wrist joint.	74
Table (9): Comparison between PROM of group I and group II before and after treatment in elbow joint.	76
Table (10): Comparison of PROM in group I and group II before and after treatment in elbow joint.	76
Fig. (1): Diagram of muscle spindle structure and innervation	6
Fig. (2): Neuronal circuit of the stretch reflex	11
Fig. (3): Pathway of descending pyramidal tract.	19
Fig. (4): Possible mechanisms mediating hyper reflexia	23

Fig. (5): Motor point chart of ventral surface of upper limb.	64
Fig. (6): Motor point chart of posterior surface of lower limb.	65
Fig. (7): Bar chart of mean values of age in group I and group II.	77
Fig. (8): Bar chart of mean values of duration of illness in groups I&II	78
Fig. (9): Bar chart of mean values of duration of illness in spastic C.P. patients in group I and group II.	79
Fig. (10): Bar chart of mean values of PROM of ankle joint in groups I&II before and after treatment	80
Fig. (11): Bar chart of mean values of PROM of wrist joint in groups I&II before and after treatment	81
Fig. (12): Bar chart of mean values of PROM of elbow joint in groups I&II before and after treatment.	82
 Pciture (1): The Dynatron 438 apparatus	 62
Pciture (2): The main cable, pencil electrode and plate electrode	62
Pciture (3): Xylocaine solution 2% and the goniometry.	63
Pciture (4): Motor point detection of forearm muscles.	63



Introduction



INTRODUCTION

Spasticity is a challenging medical problem in many cases of upper motor neuron lesion (UMNL). Hypertonicity is over charge of the gamma-1 motor neurons due to loss of inhibitory effect of higher centers on the stretch reflex (*Knapp, 1967*).

Spasticity is a common presentation in many neurological diseases. Cerebrovascular accidents, cerebral palsy, spinal cord lesion, multiple sclerosis, and myelopathy are among the important causes for spasticity (*Awad and Dykstra, 1990*).

Many hazards result from spasticity. It might interfere with daily living activities, good personal hygiene, and management of decubitus ulcers. Spasticity interferes and delays rehabilitation programs and gait training. Joint capsule tightness with muscle shortening and contractures are common complications (*Botte et al., 1988*).

Spasticity can be treated physically by best positioning, range of motion exercises, stretching exercises, pulley traction, Gatch Smith application, cold application (*Lehmann and De Lateur, 1989*), heat modalities, and electrical stimulation (*Bajd, et al., 1985*), however, complete range of motion is difficult to be reached due to joint capsule tightness and contractures associating spasticity.

Medications as baclofen, diazepam, and dantrolene sodium are also used (*Bishop, 1977*).

Motor-point phenol block is a well known method in treating spasticity. its effect is not permanent, it lasts for about six months. It has a lot of complications as phlebothrombosis, peripheral nerve injury, muscular weakness, and risk of toxicity (*Awad and Dykstra, 1990*).

Botulinum toxin is used to reduce spasticity as it blocks acetyl choline release at motor end plates (*Scott et al., 1985*).

Surgical measures as obturator neurectomy, scatic neurectomy, rhizotomy tried to treat deformities (*Herz et al., 1983*).

Local anaesthetic block selectively inhibit the gamma motor fibers, resulting in a relaxsation of intrafusal fibers. The effect of lidocaine block is transient (*Susan, 1985*). And so we will study in this thesis its efficacy when used as an adjuvent treatment in spasticity to give a chance for a proper physical management .



Aim Of The Work

