E.M.G. Changes Associated with Genital Prolapse

A Thesis
Submitted to the partial fulfilment of
The requirements of M.Sc. in
Obstetrics and Gynecology

By

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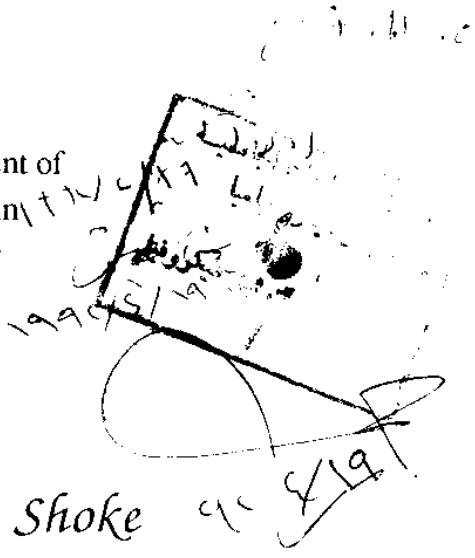

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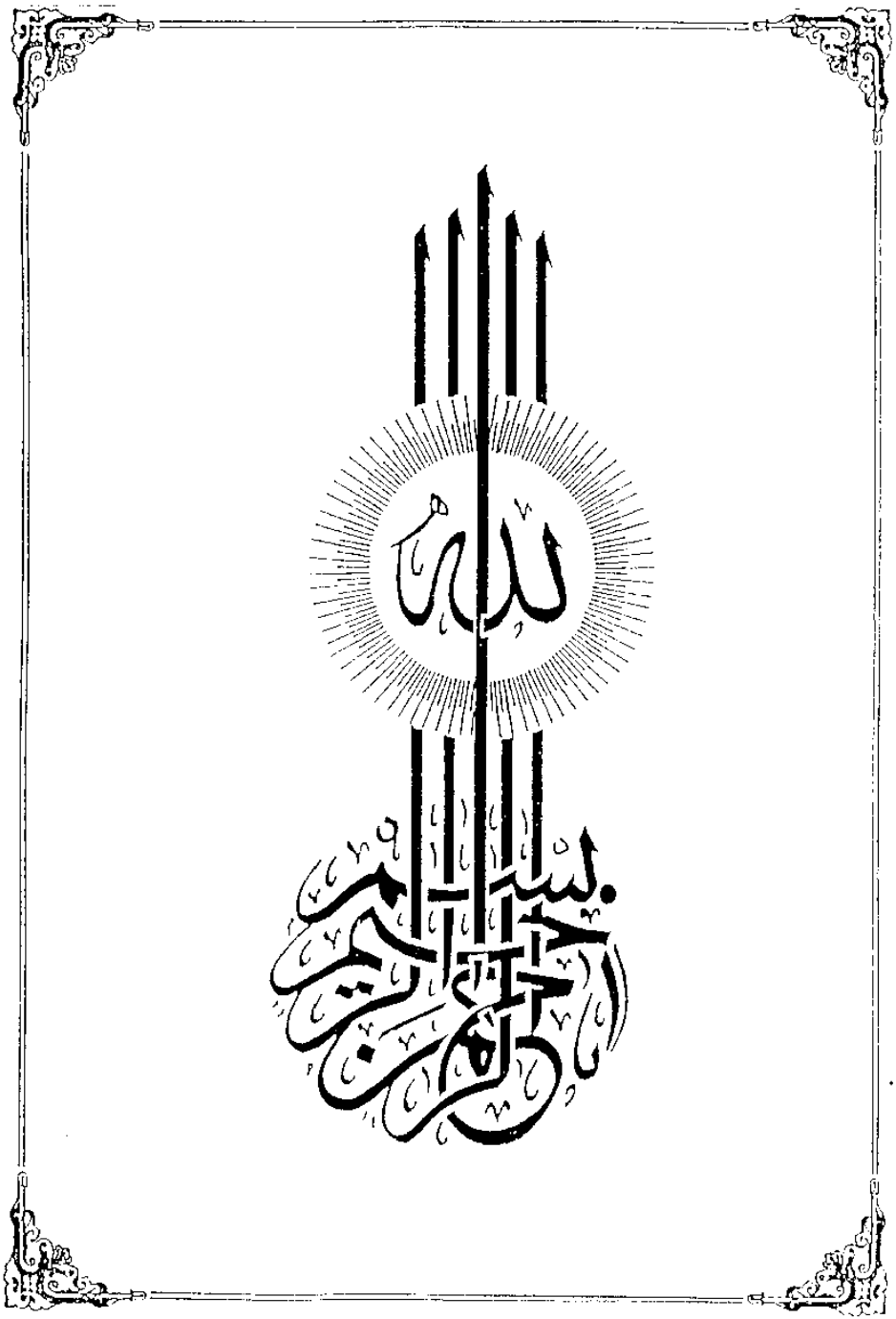

بسم الله الرحمن الرحيم

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It is a pleasure and honour to work under their guidance.

I would also like to thank all of the Urodynamic Unit, for their help in this study.

CONTENTS

LIST OF ABBREVIATIONS

EMG	:	Electromyography
SFEMG	:	Single Fibre Electromyography
VCU	:	Videocysturethrography
BMI	:	Body Mass Index
CMG	:	Cystometrogram
MUP	:	Motor Unit Potentials

LIST OF FIGURES

INTRODUCTION

INTRODUCTION

Urodynamics is the study of urine flow by all investigations used for assessing lower urinary tract function.

The bladder has a dual role; on one hand, to act as a storage organ, and on the other, to expel the urine contained. Consequently, lower urinary tract disorders can be divided into incontinence and voiding difficulties.

One of the most important urodynamic tests is the electromyographic (EMG) technique. This technique shows evidence of changes in patients with genital prolapse and/or stress incontinence.

By electromyography, the bio-electrical potentials generated by smooth and striated muscles can be studied. These can be detected by surface or needle electrodes. Use of the former is painless, but cannot measure individual motor unit potentials. Needle electrodes are accurate, but the technique is invasive and relatively unpleasant for the patient.

Also, EMG increases the clinician's diagnostic capacity, as the presence of anterior vaginal wall prolapse was thought to be the prime cause of incontinence and by effective repair of the prolapse it cures the patient.

Unfortunately, it becomes evident that such a policy was not effective, objective cure for stress incontinence treated by anterior colporraphy is about 50% (Stanton, 1975; Stanton, 1979 and Weil et al., 1984).

So, it also serves to provide a rational set of criteria for patient selection when operative treatment is needed.

REVIEW OF THE LITERATURE

ANATOMY OF FEMALE GENITAL ORGANS

1) THE VAGINA

It is an elastic fibromuscular canal extending upwards and backwards from the vulva at an angle of 60-70 degrees to the horizontal. It is not straight, but angulated backwards. The upper one-third of the vagina was directed towards S_3 - S_4 and occupied almost horizontal position even with the patient in the standing position. The upper vagina thus lies upon the rectum, which in turn, lies upon and parallel to the levator plate. Indeed, it is the horizontal position of the supporting levator plate, which accounts for similar axis in the upper vagina. This has to be maintained in repair operation as if the anterior wall is straight, stress incontinence may occur.

The cervix and anterior vaginal wall (8 cm) act as one unit, but not the posterior wall (10 cm), so the posterior wall may descent without descent of the anterior wall entails descent of the supravaginal vervix, restoration of the vagina to at least normal length is essential.

Developmental shortness of the vagina is a factor in the aetiology of prolapse.

2) THE UTERUS

It is a thick-walled muscular hollow organ shaped like a pear, its tapering end is the cervix, which projects into the upper vagina.

Measurements : in the nulliparous :

length : 3.5 inches (8.9 cm)

width : 2.5 inches (6 cm) in the widest part

thickness : 1.5 inches (4 cm)

weight : 1.5 - 2 oz. (45-55 gm)

Position of the Uterus

- When viewed from the side, the uterus is bent forwards on itself in an attitude of anteflexion. The angle of anteflexion is between the axis of the body and cervix is 160-170 degrees.
- The axis of the cervix is inclined forwards at an angle of approximately 90 degrees to the axis of the vagina "anteversion".

Supports of the Genital Organs

In discussing the cure of genital prolapse, it is necessary to consider, first, the supporting structures that have failed to maintain the genital organ in its normal position.

A. Supports of the Uterus

Kept in normal position by :

1. Vagina : the most important organ supporting the uterus and the most important tissue supporting both organs is the visceral and parietal endopelvic fascia.
2. Its weight (45-55 gm)
3. Pelvic floor
4. Ligaments
5. The anteversion anteflexion in relation to the axis of the vagina
6. Intra-abdominal pressure against the anteverted anteflexed uterus keeps it from acting like a piston in a cylinder on the vagina. In marked uterovaginal prolaspe, the uterus is in mid-position and acts like a piston in a cylinder turning the vagina inside out in the the case of 3rd degree prolapse.