STUDY OF AETIOLOGY, DIAGNOSIS AND MANAGEMENT OF NEUROGENIC BLADDER

THESIS

Submitted for partial fulfilment for the
MASTER DEGREE

In

U R O L O G Y

Presented by:

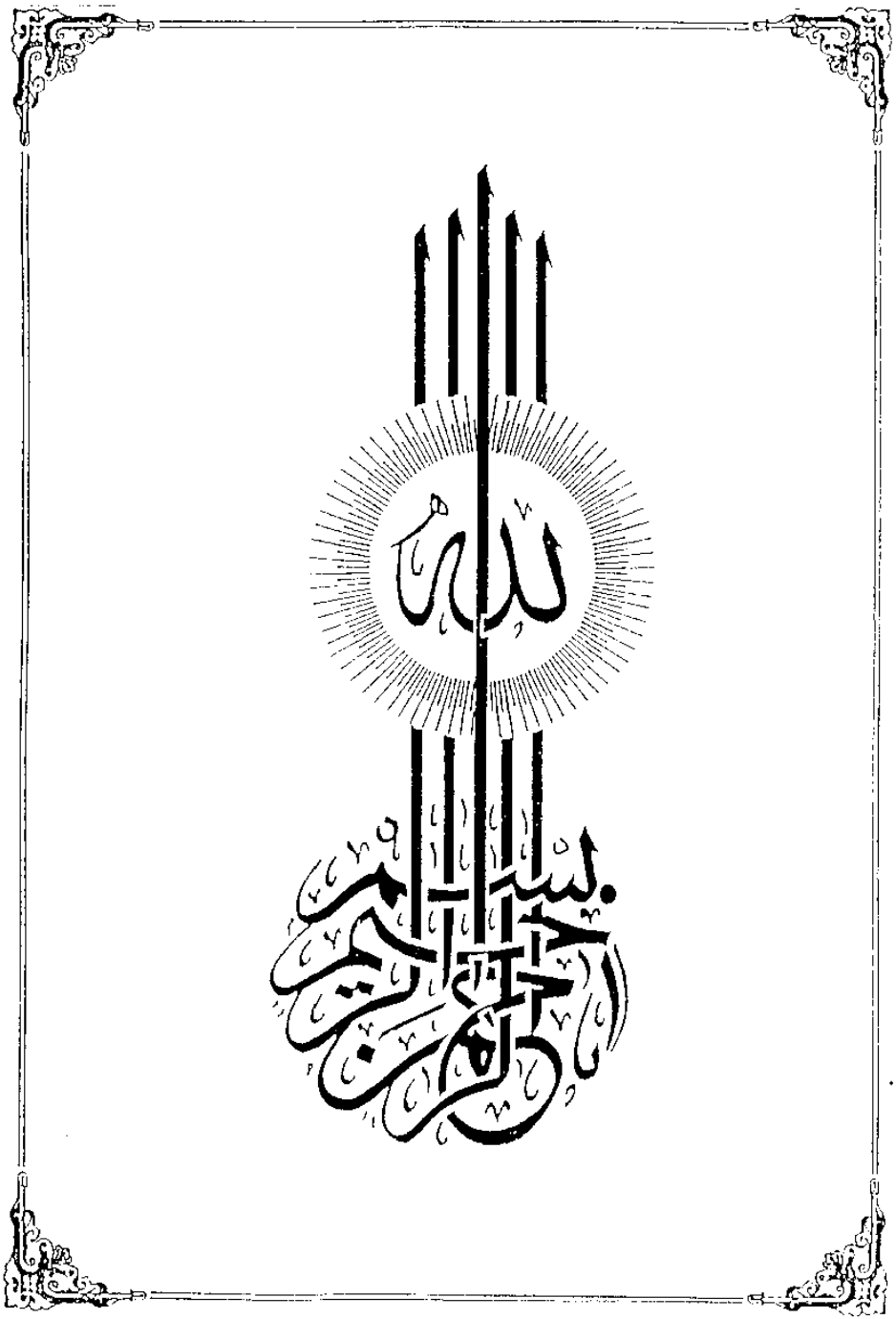
AWAD HELMEY MOHAMED KOATA
M.B.,B.Ch. Master Degree, Surgery

Supervised by:

Prof. Dr. MOHAMED HATEM EL-BIALY
Prof. of Urology
Ain Shams University

Faculty of Medicine
Ain Shams University

1985



TO MY PARENTS
AND
MY WIFE

ACKNOWLEDGEMENT

I would like to express my gratitude and my deep regards to Professor Dr. Mohamed Hatem El-Bialy, Professor of Urology, Ain Shams University for supervision and encouragement during the preparation and writing of this thesis.

I wish to thank him for his initiation suggestions and generous advice, without which this work would have not been conducted in this proper way.

AWAD KOATA
1985

... ...

C O N T E N T S

---oooOooo-----

INTRODUCTION

CHAPTER I

I N T R O D U C T I O N

Neurogenic vesical dysfunction is a poorly understood and highly controversial subject. By definition it includes all types of vesical dysfunction that result from lesions of the central and peripheral nervous systems.

The aim of the work is to study the causes, diagnosis and management of neurogenic bladder dysfunction.

Normal vesical action depends upon an intact nerve supply. If either the sensory or motor nerves are interrupted, bladder function will be impaired. The type of abnormality is determined by the site and degree of the injury.

Neurogenic bladder dysfunctions can be classified according to type or neurologic deficit. Spinal cord trauma secondary to vertebral fracture is the most common cause of neurogenic bladder dysfunction.

Certain diseases (e.g. tabes dorsalis, diabetis

mellitus, multiple sclerosis) and cord tumours, or herniated intervertebral discs also cause abnormalities in micturition. Some congenital anomalies (Myelomeningocele, spina bifida, sacral agenesis) are also associated with neurogenic bladder dysfunction. Abdomino perineal resection of the rectum disturbs the innervation of the bladder and may be followed by at least temporary difficulty with urination. Parkinsonism and herpes zoster may cause a transient neurologic deficit.

REVIEW OF LITERATURE

CHAPTER II

EMBRYOLOGY AND ANATOMY OF THE URINARY BLADDER

CHAPTER II

ANATOMY OF THE URINARY BLADDER AND DEVELOPMENT

(1) Development of urinary bladder:

The embryonic cloaca is divided by the growth of a transverse septum into a ventral uro-genital sinus and a dorsal extension of the hindgut which is destined to become the rectum and upper part of the anal canal. The uro-genital sinus is continued cranialwards into the urachus , whose cavity extends as a blind diverticulum into the allantoic stalk (umbilical cord). This cavity may persist as a patent urachus, in which case urine drains from the umbilicus, but normally it shrivels and persists as a fibrous remnant called the median umbilical ligament.

The mesonephric duct opens into the ventral part of cloaca which afterwards becomes the uro-genital sinus. The ureter grows as a bud from the caudal end of this duct; the

mesonephric duct distal to this point is called the common excretory duct.

The upper part of the uro-genital sinus enlarges to become the bladder. The common excretory duct dilates and becomes incorporated into its walls. The terminal part of the ureter shares in this progressive incorporation into the bladder wall, so that the mesonephric ducts and ureters finally open as four separate orifices. These are the ejaculatory ducts in the prostatic urethra and the ureteric orifices at the angles of the trigone. The mucous membrane between these four points is thus derived from the mesonephric duct. In the female the mesonephric ducts later atrophy and vanish, but the female trigone is developed in precisely similar manner. The epithelium of the bladder thus is of endodermal origin, that of the trigone is probably mesodermal, though histologically and functionally they are identical (Last, 1978).

(2) Anatomy of the urinary bladder:

The bladder in man is a subpritoneal

musculomembrabous sac composed of four layers: mucosa, submucosa, muscularis and serosa. The size, position, and anatomic relationships vary according to the amount of fluid it contains.

The bladder is held in place by its confluence with the prostate and urethra and by various ligamentous attachments. The true ligaments at its base are the medial and lateral puboprostatic ligaments in the male and the pubovesical ligaments in the female (Albers et al., 1973).

A number of peritoneal reflections make up the false ligaments of the bladder (Goss, 1959).

The median umbilical ligament, a remnant of the normally obliterated urachus, extends to the umbilicus, as do the lateral umbilical ligaments, remnants of the obliterated umbilical arteries.

Classically the bladder has been divided