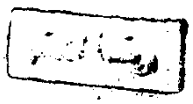
HORMONAL PROFILE IN BENIGN PROSTATIC HYPERPLASIA REGARDING TESTOSTERONE, OESTRADIOL, SEX HORMONE BINDING GLOBULIN, FSH, LH, AND PROLACTIN IN PERIPHERAL BLOOD



THESIS

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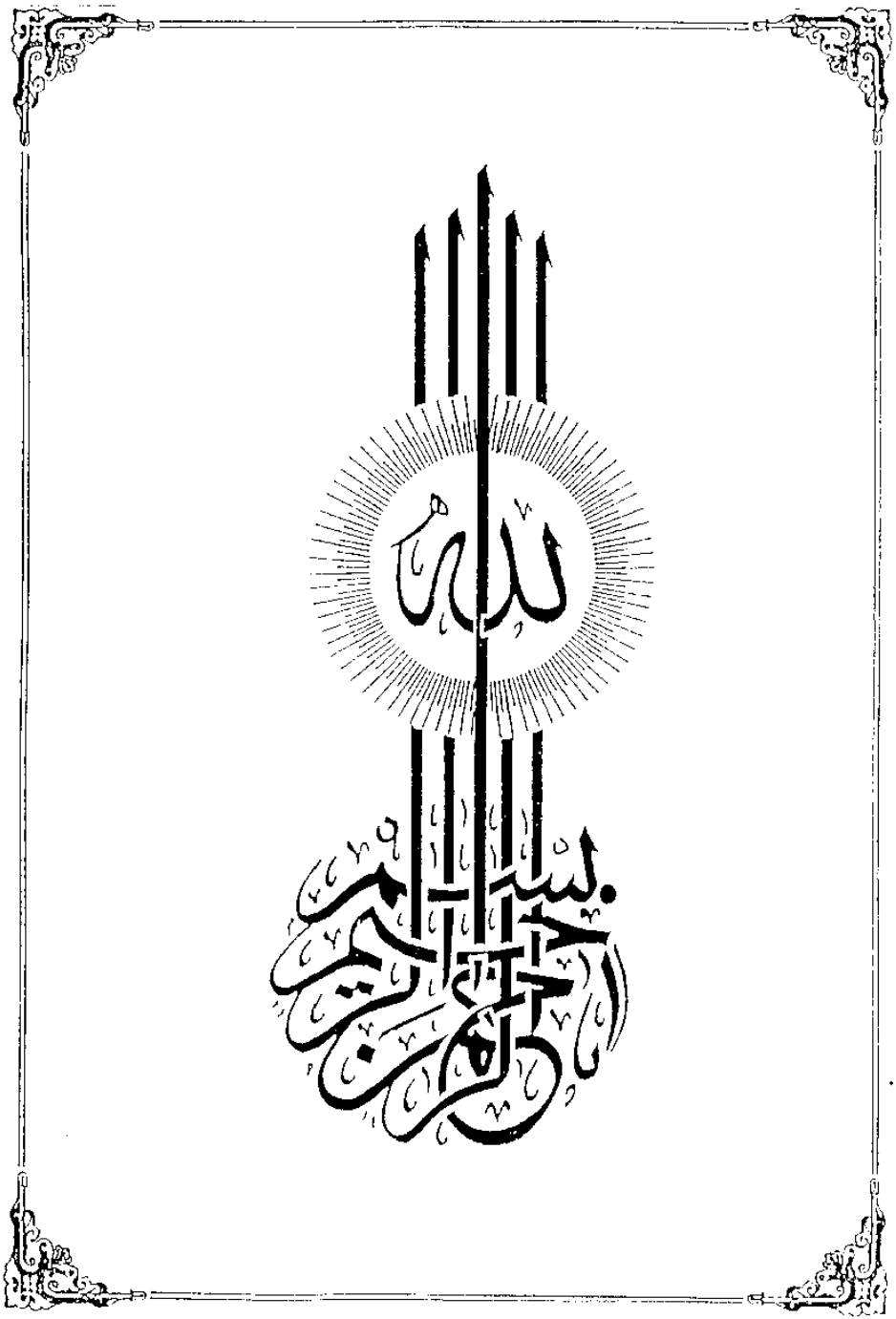

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TO

MY PARENTS,

MY WIFE,

AND MY SONS.

CONTENTS

ABBREVIATIONS USED

*	BPH	Benign prostatic hyperplasia.
*	T	Testosterone.
*	E2	Oestradiol-17β .
*	SHBG	Sex hormone binding globulin.
*	FSH	Follicle stimulating hormone.
*	LH	Luteinizing hormone.
*	PRL	Prolactin.
*	DHT	Dihydrotestosterone.
*	LH-RH	LH releasing hormone.
*	TSH	Thyroid stimulating hormone.

INTRODUCTION
AND
HISTORICAL REVIEW

INTRODUCTION

The aetiology of benign prostatic hyperplasia is still not fully clarified. BPH is an aging phenomenon. It occurs only in man and dog.

The hormonal concept is the strongest among all theories of BPH aetiology. This work is a step in a research program planed between the departments of Endocrinology and Urology, faculty of medicine, Ain-Shams university. The currently concerned hormones with BPH are investigated in this series in peripheral venous blood. Testosterone, oestradiol, sex hormone binding golbulin, FSH, LH, and prolactin are considered in this series. The mentioned hormones were measured in the serum to show the peripheral hormonal background against which BPH occurs.

The work is aimed to be a documentary one. The results are discussed in view of the current literature regarding this concern. The improved radio-immune assay techinques and the availability of more sensitive and easily processing kits allowed a more precise and easy assessment for hormonal concentrations of the concerned hormones.

Hormonal assessment in peripheral blood is only one aspect in investigating the role of any particular hormone in a specific condition. This documentary work is a step towards clarifying BPH aetiology.

HISTORICAL REVIEW

The fact that an obstruction to the outflow of urine is liable to develop in old men, was noticed and reported since immemorial times.

As early as 1400 B.C., Hippocrates described in his records the following clinical condition, which fits with prostatism; " When a patient passes in the urine blood and clots, he suffers strangury and is seized with pain in the perineum and pubis, it indicates disease in the region of the bladder."

At 400 B.C., Midrash reported that " Old men have to strain to pass their water, and occasionally need to defecate before they can urinate. Old men were advised to urinate at the first urge, since any delay might lead to retention and swelling of the abdomen."

Iben Sena wrote, " Old men suffer obstruction to their urine outflow, and have to wait and to relax for regaining their urine outflow again."

According to Young, the prostate was first described in the sixteenth century, by Massa. But it was until the seventeenth century, that Riolan discovered that prostatic enlargement could obstruct the urinary outflow. However, Francisco Diaz (1515), described the condition of prostatism and attributed it to sexual abuse. He called it " Carnosities of the prostate ". He, as well, invented an instrument, which was used for urethral dilatation,

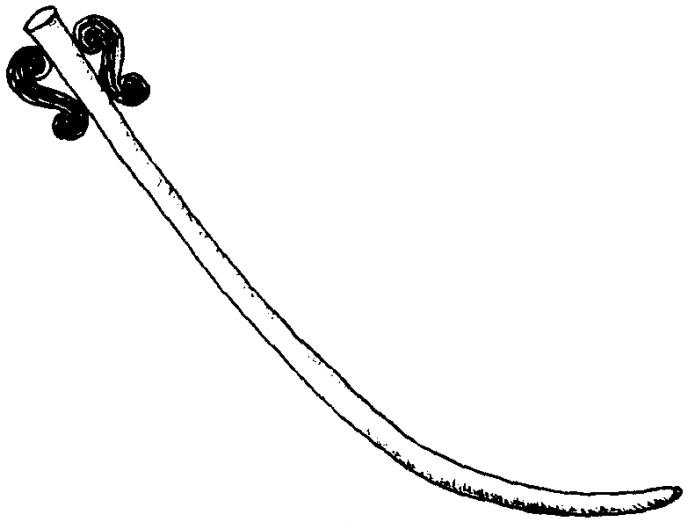

Fig.(1). Instrumento cisorio.

called " Instrumento Cisorio ". Fig.(1)

In 1760, Morgagni provided the first detailed pathological description of prostatic hyperplasia and its associated complications. More recently, **Virchow (1862)**,Moore (1943), and Huggins (1947), described the modern concepts regarding the aetiology and pathology of benign prostatic hyperplasia (BPH).

The importance of androgens in reproduction and particularly in the development of the male secondary sex organs, was recognized in the earliest annals of science

to be dependent on the presence of the functional testes.

Early medical writings described operative trials, variously done through the perineum, open bladder and urethra for relief of urinary retention. However, current techniques of prostatectomy did not emerge until the closing years of the nineteenth century. The names of Goodfellow, and Young are linked with perineal prostatectomy, and those of Fuller and Freyer with the suprapubic method. Later on, Millin (1945) performed his first retropubic prostatectomy.

In general, the physiology of the male sex accessory organs, including the prostate, has been always a matter of continuous research and investigations. Till now many investigators are wondering, what God had in mind for many of these male sex accessory organs. " What do they contribute to the well-being of the spermatozoa ?" ask the andrologists and gynaecologists. While the pathologists and urologists wonder regarding " How does its diverse secretory products affect the development of a prostatic disease ? ". Finally, the endocrinologists are co-operating with the biochemists to find out " How the hormones regulate the production and release of the separate secretory products. The following work, is aimed and designed to be a sharing step in the long way towards understanding the pathogenesis of benign prostatic hyperplasia (BPH).

ANATOMY

ANATOMY

GENERAL DESCRIPTION

The prostate is a composite structure which includes glandular elements and a stroma of collagenous and muscular tissues. It surrounds the commencement of urethra in the male.

The prostate varies in size, an average measurement being; length 3.4 cm, width 4.4 cm and thickness 2.6 cm. Its weight is about 20 grams in adult male.

The prostate is situated at a low level in the lesser pelvis, behind the inferior border of the pubic symphysis and the pubic arch, and anterior to the ampulla of the rectum, through the wall of which it can be palpated. Fig.(2)

The prostate is somewhat conical in shape, and thus presents for examination a base or 'vesical aspect', an apex, posterior, anterior and two inferolateral aspects.

The Base is, for the greater of its extent, directly contiguous with the neck of the urinary bladder, superior to it. The urethra enters this surface nearer to its anterior border. There is further continuity between bladder and prostate in the downward extension of the deep trigone into the prostate as a "muscular sleeve" surrounding the upper part of the prostatic urethra