RETROGRADE EJACULATION

Essay

Submitted in Partial Fulfilment
For the Degree of M. Sc.

In

Urology

By:

Mohsen Kamal Gerace
M.B.B. Ch.

Supervised By:

Dr. Ibrahim Ragi

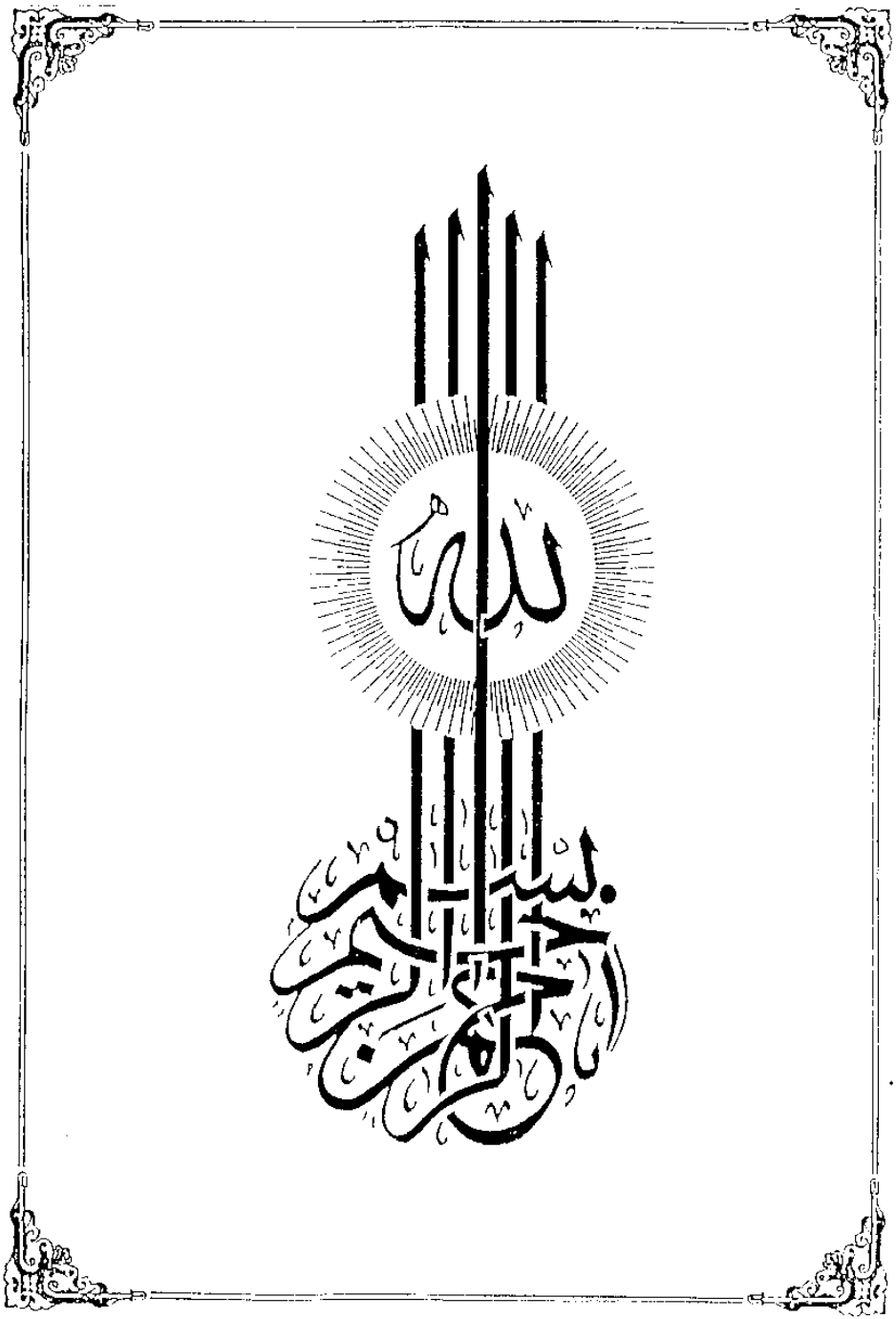
Professor & Chairman of Department of Urology
Faculty of Medicine

Ain Shams University

1987

ACKNOWLEDGEMENT

I would like to express my deep gratitude and appreciation to Professor Dr. Ibrahim Ragi, Professor and Chairman of Urology Department, who had convinced me to start this work. He was following me with advice, guidance and encouragement to accomplish the work as he wanted it to come.



CONTENTS

INTRODUCTION

INTRODUCTION

The term Retrograde ejaculation doesn't only mean the abscence of ejaculate at orgasm.

There are different pathological conditions where there is abscence of true ejaculate at orgasm, yet there is no actual retrograde ejaculation.

In the same time, presence of visible ejaculate at orgasm also doesn't mean the abscence of true retrograde ejaculation.

The discovery of semen or its contents in the bladder with or without presence of ejaculated semen, should be considered the correct term that describe retrograde ejaculation.

The aim of this essay is to broaden the scope of data currently known about this subject.

I would like to be born in mind that such entity is not only the thin of urologists work, there are different etiologies for such disease, and science offers many solutions for treatment.

Till now, there is not yet an ideal treatment, but fathering of a child which is the corner-stone of the problem is considered a hopefull matter by different, medical, surgical and artificial insemination means.

ANATOMY

- ANATOMICAL DESCRIPTION OF THE MALE GENITAL ORGANS
- INNERVATION OF THESE ORGANS

Male Genital Organs :

The male genital organs consist of the testis and epididymides, which are situated in the scrotum, the ductus deferentes (vasa deferentia), which contained in the spermatic cords in a part of their course, the seminal vesicles, the ejaculatory ducts, the prostate, the bulbourethral glands, and the penis.

All of these organs are paired, except the prostate and the penis, which are single.

The spermatozoa, which are formed in the testis, are the essential constituents of the seminal fluid. They pass from the testis to the epididymis, where they are stored. A mucoid secretion from the epididymis forms one of the constituents of the seminal fluid.

After their emission from the epididymis, the spermatozoa pass through the ductus deferens and ejaculatory duct into the urethra, through which they reach the exterior.

The remaining constituents of the seminal fluid are produced in the seminal vesicles, the prostate and the urethral glands.

The secretion of these structures, which are sometimes called the glandular accessory genital organs, empty into the urethra.

TESTIS AND EPIDIDYMIS

Testis:

The testis are paired, ovoid organs. After puberty, they produce spermatozoa, and in as much as they are in part endocrine glands, they secrete a hormone, which is responsible for the secondary sexual characteristics of the male.

They are situated in the scrotum, where the left is usually at a lower level than the right. The right is lower than the left in cases of situs inversus totalis "Cholst" and is usually lower than the left in left handed men "Chang et al.".

In the adult, each testis weighs on the average 25 gm; in the majority of cases the right is heavier than the left. The testis may weight much less in old age.

The Greek word for testis is orchis; such words are orchitis are derived from it. Each testis has superior and inferior ends, medial and lateral surfaces, and anterior and posterior margins. Both surfaces are somewhat flattened.

The posterior margin is covered by the epididymis and the lower part of the spermatic cord.

Structure:

The tunica albuginea is the outer covering of the testis. It lies beneath the visceral layer of the tunica vaginalis and consists mainly of dense, inelastic connective tissue.

Delicate fibrous septa pass from its deep aspect into the interior and incompletely divide the testis into wedge shaped lobules, between 250 and 400 in number, each with one to four tubules.

The bases of the wedges are at the deep aspect of the tunica albuginea; the apices converge near the posterior margin of the testis, where the septa also converge and form the mediastinum testis, which is a mass of fibrous tissue continuous with the tunica albuginea.

The parenchyma of the testis is located within the lobules and consists of the convoluted seminiferous tubules, which resembles delicate, tortuous threads.

It is estimated that more than 800 tubules are present in each testis. These tubules become less twisted and convoluted in their course backword.

As they approach the mediastinum they unite to form between 20 and 30 straight seminiferous tubules. These, in turn, pass in the rate testis, an elaborate network of canals, which traverses the mediastinum.

From the network are formed 15 to 20 channels, the efferent ductules, which enter the head of the epididymis.

The interstitial cells are located in the loose tissue under the tunica albuginea, in the septa, and in the stroma that surrounds the individual convoluted seminiferous tubules. They secrete testosterone, the male sex hormone.

Epididymis :

The epididymis is a C-shaped structure, which is applied to the posterior margin of the testis and overlaps the adjacent part of the lateral surface.

The spermatozoa are stored in it until they are emitted. It is subdivided into three parts : a head, a body and a tail. The efferent ductulis of the testis which are at first straight, become very tortuous after they enter the head of the epididymis. Here, they form wedge - shaped masses, the lobules (or cones) of the epididymis, the apices of which are directed toward the testis.

After a twisted course, each ductule open opposite the base of a lobuli into a single tube, the duct of the epididymis.

This duct is very greatly convoluted, and it makes up the main mass of the remainder of the epididymis. It is about 6 meters long. The head of the epididymis is the upper, larger part, which lies on the superior end of the testis and overhangs it.

The body of the epididymis is attached to the posterior margin of the testis. It is separated from the adjacent part of the lateral surface by the sinus of the epididymis, a space formed by an invagination of the visceral layer of the tunica vaginalis in this region.

The tail of the epididymis is the lower, smaller part. In it, the duct of the epididymis increases in thickness and diameter and becomes the ductus deferens. The appendix testis is a small body on the upper end of the testis. It is usually sessile, but may be pedunculated. It is a remnant of the upper end of the paramesonephric duct, and is homologous with the fimbriated end of the uterine tubule of the female.

The appendix of the epididymis is a small appuendag usually pedunculated, on the head of the epididymis. It is regarded as a remnant of the mesonephros. Blood supply "Harrison and Barelay".

The testis is supplied by the testicular artery, which divides into a variable number of branches. These branches pass to the posterior border of testis medial to the epididymis. They penetrate the tunica albuginea and ramify in the underlying loose connective tissue, the tunica vasculosa.

Small branches pass along the septa towards the mediastinum.

The testicular artery, or one of its branches, anastomoses with the artery of the ductus deferens, and with the external spermatic artery "Harrison". The veins of the testis pass backward to the posterior border, pierce the tunica albuginea, and join the pam-piniform plexus.

The epididymis is supplied by the testicular artery or by one or more of its branches. Its veins drain into the pampiniform plexus.

Lymphatic Drainage :

The lymphatic vessels from the testis and epididymis pass upward with the testicular vessels. They drain into the lumbar (aortic) nodes "Wahlquist".

Nerve Supply : "Mitchell" :

The testis is supplied by the testicular plexus, which receives additional fibres from the genitofemoral nerve and also, according to clinical evidence "Woollard", from the posterior serotal nerves.

The sympathetic fibres reaching the testis are probably mainly vasomotor. The testicular pain resulting from squeezing or swelling is severe, and often sickening or shocking, especially when it is acute.

Under certain conditions it may be referred to the grain or to the lower part of the abdominal wall. The epididymis is supplied by fibres of the inferior hypogastric

plexus that are continued along the ductus deferens.

The importance of the autonomic supply to the smooth muscle of the ductus is uncertain.

DUCTUS DEFERENS, SEMINAL VESICLE, AND EJACULATORY DUCT

Ductus Deferens :

The ductus deferens (vas deferens) is the continuation of the duct of the epididymis, and carries the spermatozoa from the epididymis to the ejaculatory duct.

It begins at the tail of the epididymis, where it is very tortuous. It becomes straighter as it ascends on the medial side of the epididymis near the posterior border of the testis.

Here, it is surrounded by the pampiniform plexus of veins and is incorporated into the spermatic cord. It continues upward from the superior end of the testis to the superficial inguinal ring, and in this part of its course it can be felt as a firm cord when held between the thumb and the index finger.

After passing through the inguinal canal, it leaves the other structures in the spermatic cord by turning around the lateral side of the inferior epigastric artery and ascending in front of the external ilial artery for a short distance.

It then turn backward and slightly downward, crosses the external iliac vessels, and enters the pelvis. As it continues backward, it is covered medially by peritoneum, and is related laterally to the umbilical artery, the obturator vessels and nerve, and the superior vesical vessels.

After crossing the medial side of the ureter, it turns medially and downward to run in the sacrogenital fold. It reaches the posterior aspect of the bladder, and then runs downward and medially on the medial side of the seminal vesicle.

In this location, the canal of the ductus is enlarged and tortuous, and this portion of the ductus is termed the ampulla.

The canal is again small in caliber near the base of the prostate, where the ductus deferens joins the duct of the seminal vesicle to form the ejaculatory duct.

The inferior ductulous aberrans is a narrow, coiled tube, which is often connected with the first part of the ductus deferens, or with the lower part of the duct of the epididymis. It may be as long as 35 cm when uncoiled.

The superior ductulus aberrans is a narrow tube of variable length, which lies in the head of the epididymis and is connected with the rate testis.

The paradidymis lies above the head of the epididymis in the anterior part of the spermatic cord. It consists