EFFECT OF HIGH LIGATION OPERATION IN TREATMENT OF PRIMARY VARICOCELE AND INFERTILITY

THESIS

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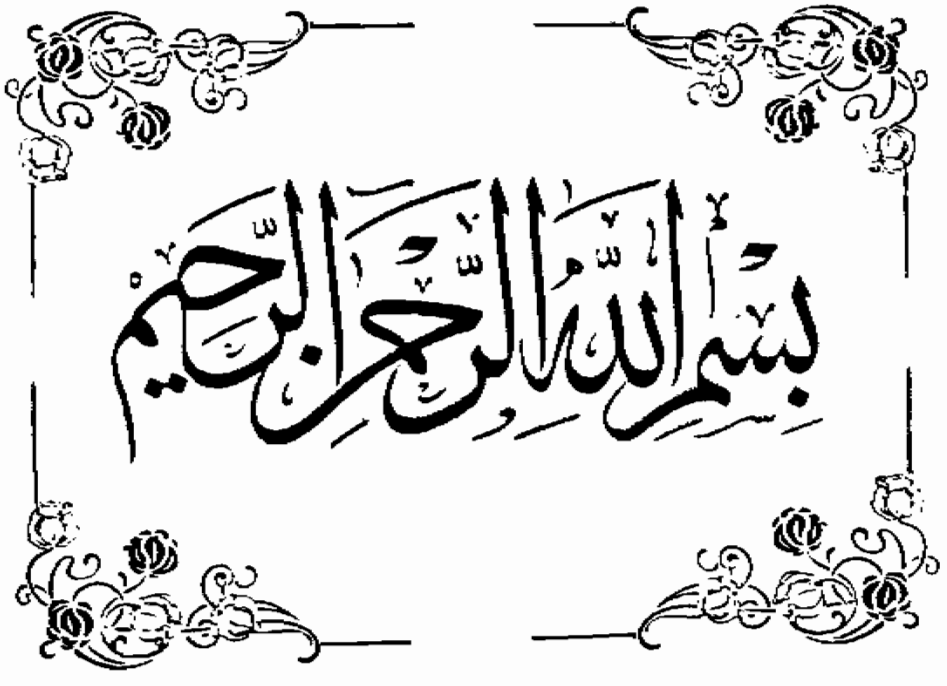

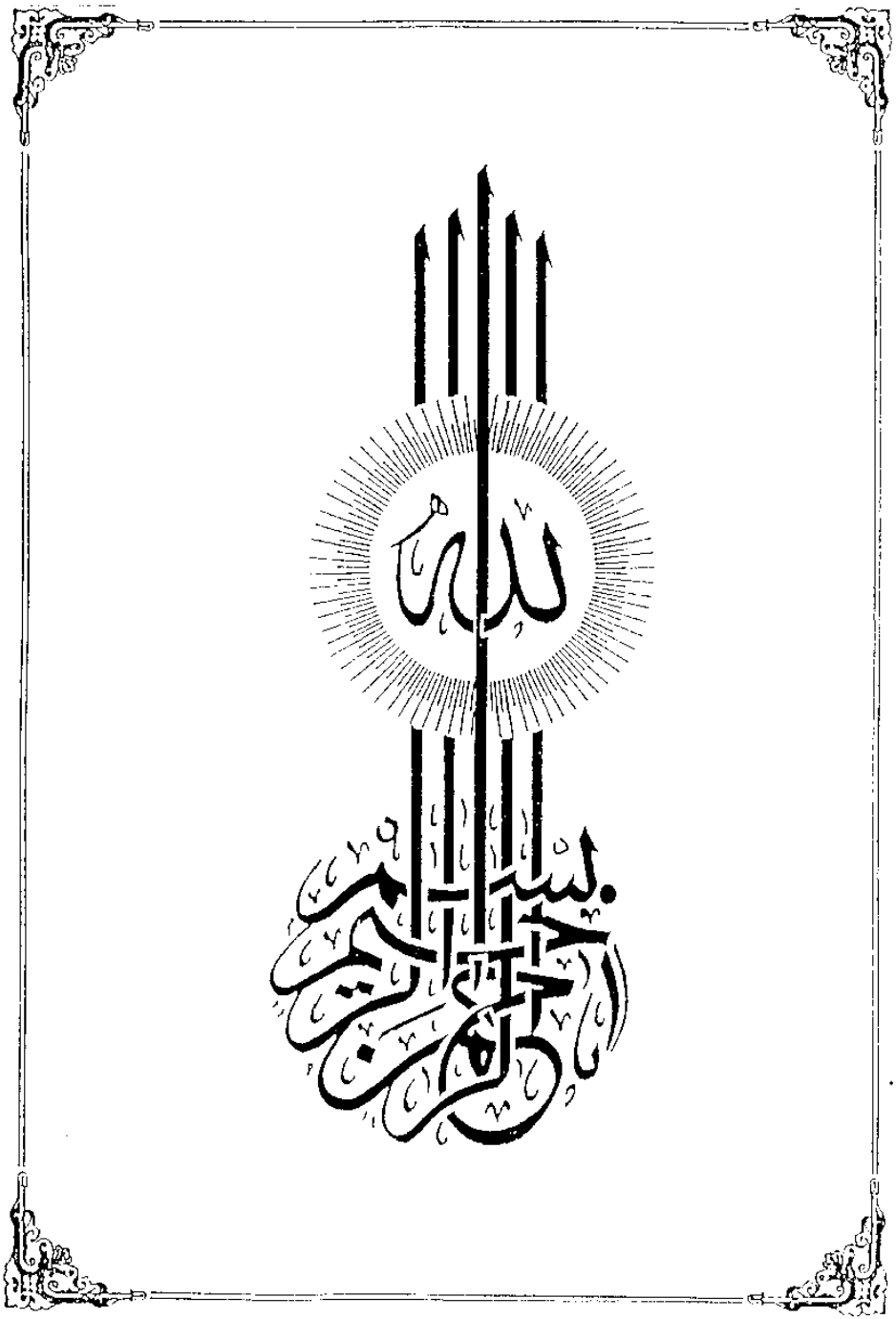

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INTRODUCTION AND AIM OF THE WORK

Varicocele is the term applied to dilation and tortousity of the veins of the pampiniform plexus. Most commonly observed on the left side. In the past, it has been thought that the varicocele is an innocent condition that could maximaly be accompanied by a scrotal or groin pain, without serious complications [Olson and Stone, 1949].

The only indication for operative interference has been for long, the admission to the military survice [Thomson-Walker, 1950].

A part from this, varicocele has been considered a medical problem.

Selbi Tolloch [1952] was the first to draw the attention to varicocele as a cause of infertility. This has been emphasized later on by other investigators as Davidson [1954], Tulloch [1955] Rains and Cooper [1956], Scott [1960], Winsbury white and Furgusson [1961]. Charny [1962] amd Shafik [1974].

The principal cause of male infertility is a spermatogenic defect. The principale causes of defective spermatogensis include :

- Congenital inadequacy of the seminiferous tubules.
- Testicular damage as a consequance of pyogenic infections, mumps, orchitis, testicular truma or infarction .
- Hormonal defects as in hypopitutrism and cryptorichism.
- Impaired transport of sperms due to fibrosis and stricture formation secondary to chronic prostatitis and seminal vesiculitis [Glenn,1972].

Many theories have been put forward to explain the cause of diminished spermatogensis with varicocele. Macleod et al., [1966] stated that there is a retrograde flow of adrenal steriods and renal metabolites through the varicocele into the testis, via the left renal and left adrenal veins.

It is suggested that varicocele causes defective spermatogensis on the basis of increased intrascrotal temperature due to venous stasis [Stephenson and Oshaughnessy 1968, Zorgniotti and Macleod 1975].

Shafik et al., [1973] demonstrated that the

fasciomusular tube of the spermatic cord acts as an elastic stocking which supports and helps venous drainage of the cord veins .

The presence of tubal defects and sublaxation of the fasciomuscular tube plays an important role in the initiation and recurrance of varicocele [Shafik and Shafik et al., 1973].

There are many operative procedures for treatment of varicocele, and these include :

- High ligation .
- Multiple ligation.
- Plication operation [Shfik, 1972].
- Fascial grafting of the spermatic cord [Shafik, 1973].
- Tunical sling operation [Shafik, 1974 .

In this work we are going to study cases presented by primary varicocele in association with infertility and we are going to evaluate the efficiency of high ligation in the treatment of both conditions.

REVIEW OF LITERATURE

DEVELOPMENT OF THE TESTIS AND THE CORD

The testes develop from the genital ridges which start to appear in the fourth week of the intrautrine life in the form of a pair of longitudinal ridges lying on either side of the middle line between the mesonephros and the dorsal mesentry of the embryo, the genital ridges are formed by proliferation of coelomic epithelium during the sixth week of intrauterine life. The premordial germ cells in the wall of the yolk sac migrate along the dorsal mesentry of the hind gut to the gonadal ridges and become located in the proliferating epithelium on the surface as well as in the under lying mesenchyme. The primitive germ cells and the proliferating coelomic epithelium form irregular cellular cords called the primitive sex cords surrounded by the supporting cells and the mesenchyme. The interstial cells of leydig develop from the mesenchyme between the supporting cells and the testis cords. The supporting cells will later develop into the sertoli supporting cells..

The testis cords then lose their connection to the surface epithelium and the testis become surrounded

by a thick layer of white fibrous tissue capsule called tunica albuginea, then the epithelium on the surface of the testis disappears. The testis cords develop into the seminiferous tubules. The straight tubules, rete testis and the seminefrous tubules remain solid until puberty at which they acquire a lumen and start to function.

The vasa efferentia, epididymis and vas deferns develop from the caudal part of the mesonephric duct [Fig., 1].

DESCENT OF THE TESTIS:

The testis develops high up on the posterior abdominal wall during the intrauterine life and has to descend to lie in the scrotum. The descent of the testis is under control of maternal gonadotrophic hormones and is accampanied by shortening of the gubernaculum which is a fibromuscular band attached inferiorly to the bottom of the scrotum and superiorly to the lower pole of the testis and adjacent peritonium, the intrabdominal pressure helps the late stages of descent of the testis. A tubular diverticulum of peritonium called the processous vaginalis is drown down wards with the testis.

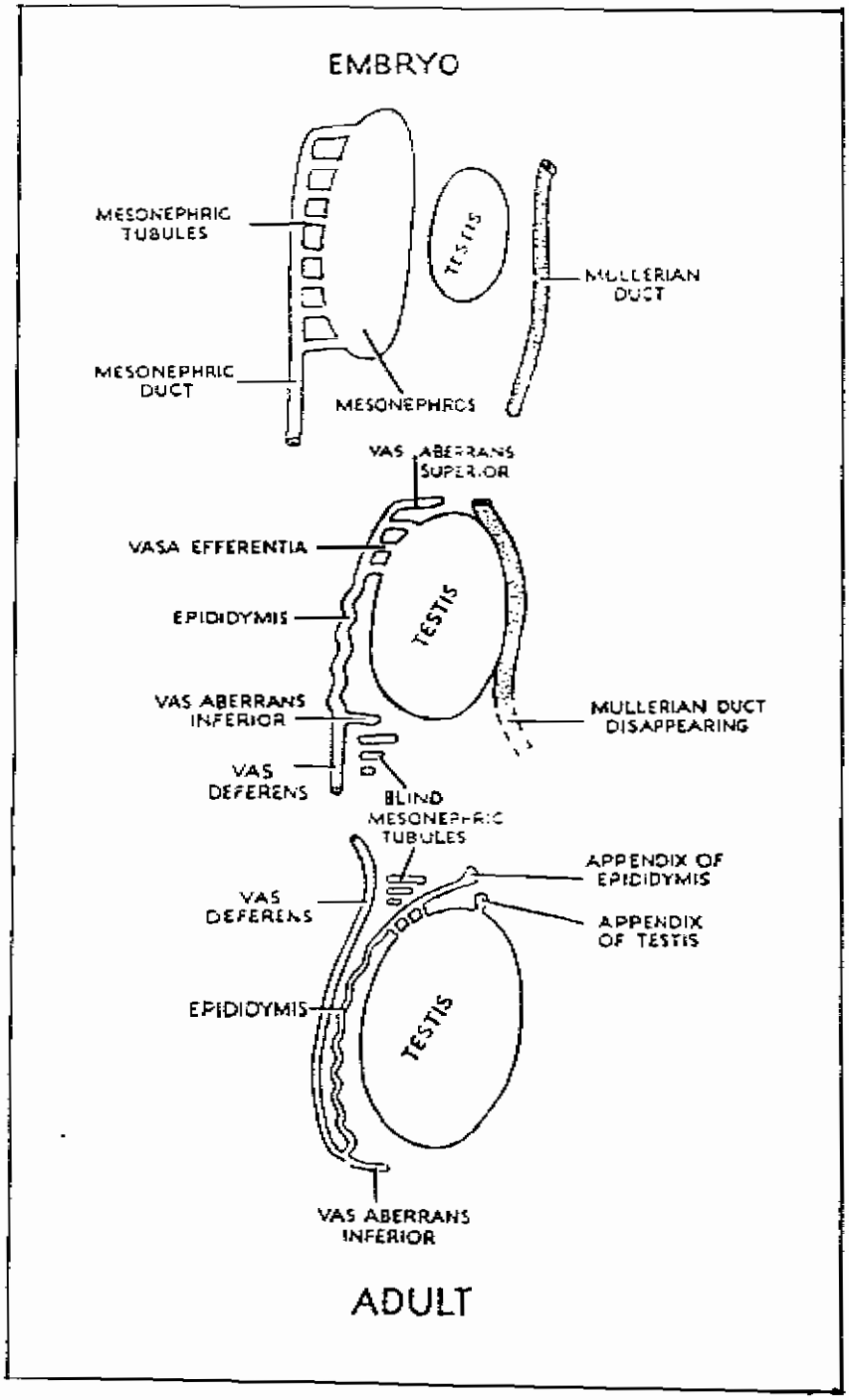

Fig. 1. The development of the vasa efferentia and the epididymis.

The orifice of the processous vaginalis is closed just before birth, and its middle part is closed from the first month after birth or may close immediately after birth [Skandalakis and Grey, 1974].

The scrotal part of the processous vaginalis perists invaginated by the testis to form the turnica vaginalis. The testis reaches down to the iliac fossa at end of the third month of intrauterine life, the internal ring at the begining of the seventh month of intrauterine life,the external ring at the eights month of intauterine life, and finally the scrotrum during last week of the ninth month of intrauterine life. During its descent, the testis together with the tunica vaginalis and the spermatic cord receive a covering from every layer of the abdominal wall through which they pass and these coverings are the internal spermatic fascia from the trnasversalis fascia, the cremastric muscle and fascia from the internal oblique and external spermatic fascia from the external oblique muscle at the margins of the external inguinal ring .

A N A T O M Y

THE TESTIS

GROSS ANATOMY:

The testis is an oval organ possessing a thick covering of fibrous tissue, the tunica albuginea. To its posterolateral surface, the epididymis is attached. The vas lies medial to the epididymis, connected to its inferior pole.

the front and lateral surfaces of the testis lie free in a serous space formed by the overlying tunica vaginalis, a remenant of foetal processus vaginalis. This serous membrane cover also the anterolateral part of the epididymis. A slit like space, which lies between the testis and the epididymis, called the sinus of the epididymis, thus lies within the tunica vaginalis.

Testis, epidiymis and tunica vaginalis lie in the scrotum surrounded by thin membranes, adherent to each other, these are down ward prolongations of coverings of the spermatic card. Right and left sides are separated by the median septum scroti. The appendix testis is a sessile cyst 2X3 mm. in diameter attached to the upperpole of the testis, within the vaginalis. [Last, 1972].

MINUTE ANATOMY OF THE TESTIS:

The testis has a thick white capsule called the tunica albuginea which is thickened along its posterior border to form the mediastinum testis. from the mediastinum testis, fibrous septa radiate into the testis dividing it into 400 lobules. Each louble contains two or three seminefrous tubules, each one shows several layers of cells. The basal of which is the germinal epithelium which produces the spermatids.

Each two semineferous tubules unite to form a single straight tubule, the straight tubules enter the mediastinum testis and break into a network of canaliculi known as the rate testis. From the upper part of the rate testis arise about 15-20 vasa efferentia, these enter the commencement of the canal of the epididymis, thus attaching the globus major, the head of the epididymis to the testis.

THE EPIDIDYMIS

This is a firm structure, attached behind the testis with the ductus deferens to its medial sid. It consists of a single tube 6 meter [20 FT].long, highly coiled and packed together by fibrous tissue. The mass