URINARY INCONTINANCE IN MALES

ESSAY

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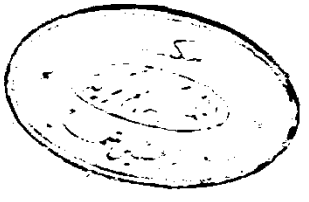

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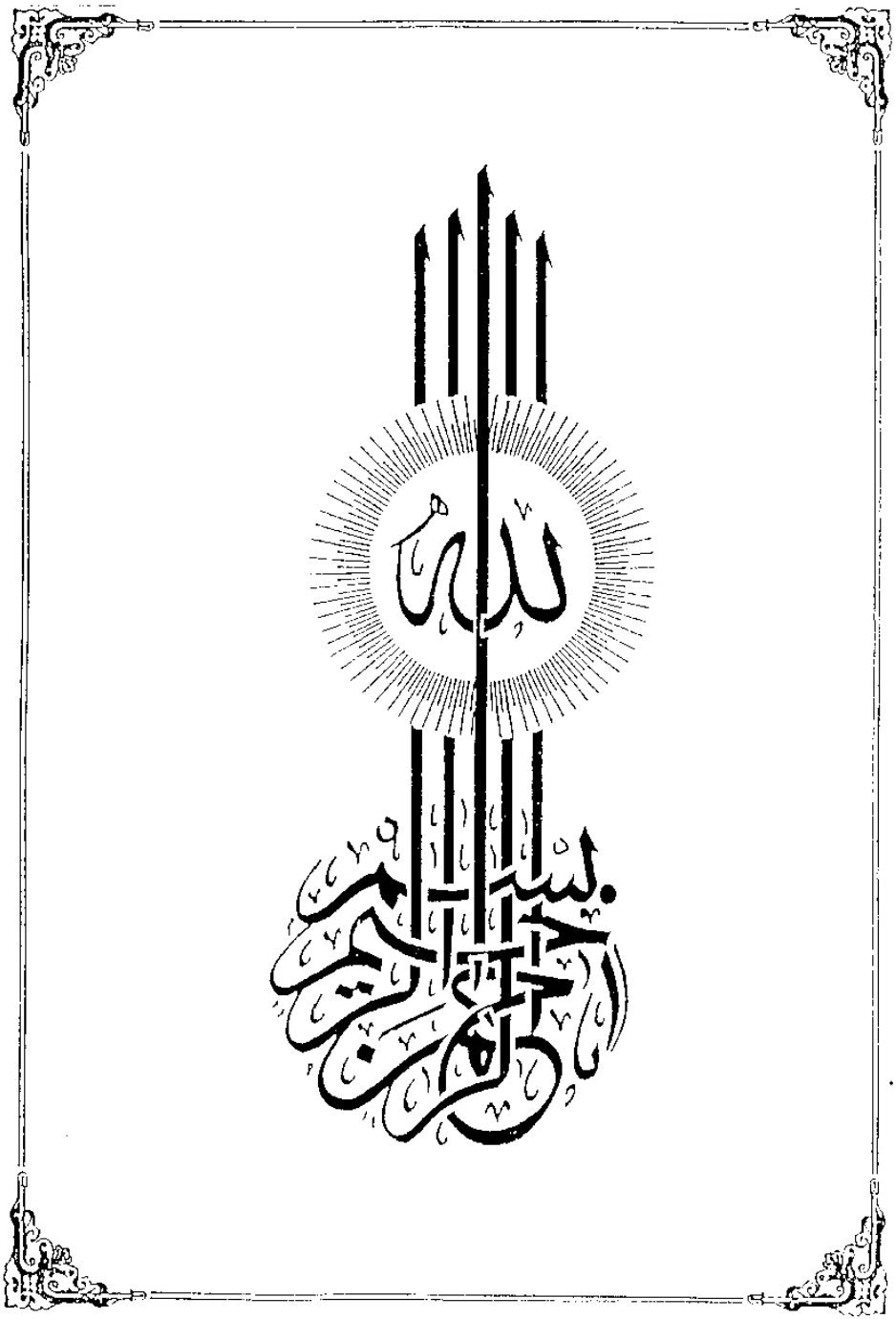
TO MY WIFE
AND MY BABY



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CONTENTS

INTRODUCTION

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Urinary incontinence is defined as a clinical syndrom that implies involuntary voiding per via naturals. Gibbon, 1982.

Urinary incontinence is fundamently the result of a urodynamic imbalance between the bladder evacuating forces on the one hand and the urethral resistance and its control in the other hand. (Worth, P. (1979).

It is a common condition, not merely to the urologist but to clinicains from many other discplines, and the problem presents a range of morbidity that needs to be considered in broad prespective.

British data indicate that at least 10% of the population over 65 years old have some degree of urinary incontinance and that 2% of community dewlling persons over age 65 years old are afflicted with urinary incontinence sever enough to cause substantial limitation or alteration of daily activity. Hadley, E.C.(1986).

There are a number of different types of urinary leakage from a wide variety of causes. Whatever the cause, incontinence of urine is an unpleasant situation for the patient, it has marked effect on the general health and morale of the patient makes him so offensive to himself and to others and lead him to evad society.

Bors (1954) discuss the relation between bladder function and renal damage; he found a renal mortality rate of 2% in those with a balanced bladder, in contrast to 31% in those with unstatisfactory bladder function. Bors, 1954.

Although incontinence is not life-threatening disease, the embarrassment, humitiation, and inconvenience it causes make it a "social cancer".

We shall discuss Embryology, Anatomy, physiology, clinical classification, Etiology, diagnosis and treatment of male urinary incontinence in both pediatric and adult.

EMBRYOLOGY OF VESICO-URETHRAL UNIT IN MALE

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Cloaca:

The lower urinary system begins as a cloaca, a union of the hindgut, allantois and wollfIan duct in the Fourth week of gestation (5mm. Croun rump length). The cloaca originally develops from the yolk sac as the embryo forms. The urorectal septum then grows and bisects the cloaca after it fuses with the cloacal membrane . This fusion occurs at the seventh week of gestation. The cloaca is then divided into the dorsal hindgut and the ventral urogenital sinus. The cloacal membrane is also bisected into a dorsal anal membrane and a ventral urogenital membrane The point of entrance of the mesonepheric (Wolffian) duct divides the primitive urogenital sinus into the cranial urethrovesical canal and the caudal definitive urogenital sinus. (Marshall, F.F.; 1978).

The vertex of the early bladder now is continous with the allantoic duct, and a definit allantoic diverticulum extending into the body stalk has been recognized in the embryo as late as stage 17 (6 week old) Von Hagek, 1969.

This diverticulum may have served as a receptacle for embryonic urine prior to the rupture of the cloacal membrane. Once the cloaca has established communication with the amniotic space, however, the allantoic duct loses

its lumen, becomes atretic, and contributes only to the most proximal (umbilical) portion of the urachus.

Inferiorly, the ovoid cloacal pouch continous for a short time into the tail of the embryo as the tailgut, which disappears in stage 14 embryo.

Bladder and Urethra:

The cranial urethrovesical canal forms the urinary bladder and a portion of the urethra. During the twelfth week the splanchnopleuric. Patten, B.M. 1968

The allantois gradually regresses to a connective tissue cord and becomes the urachus. Begg, R.C. 1930.

In the male the urethro vesical canal forms the prostatic urethra to the level of the ejaculatory ducts. The remainder of the urethra is formed from the urethral plate, which is derived from endoderm that penetrates the underside of the genital tubercle. Epithelial buds arise from the urethra in the eleventh to the twelfth week (50:60mm) to form the the prostate.Marshal 1978.

Anomalies of the lower urinary tract leads to urinary Incontinence:

(The etiology of many of these congenital defects, not proven)

A. Vesical and urethral Anomalies:

1. Epispadias-extrophy.

Marshal and Muecke (1962) beleive that the basic defect in this complex condition is an abnormal

over development of the cloacal membrane, preventing migration of the mesenchyme tissue between its endodermal and ectodermal layers. Rupturs of this abnormal membrane creates a large defect than the usual anal and urogenital orifices, thus exposing the urethra and bladder to the extent that the infra-umbilical abdominal wall is deficient. Central perforation of the cloacal membrane would account for the high incidence of incontinent epispadias and classic extrophy, and superior and inferior perforation for the less frequent penile epispadias and superior vesical fissure.

This Anomaly occurs about the fifth to the sixth week in utero, Marshal and Muecke (1962).

Patton and Barry theorize that caudal displacement of paird primordia of the genital tubercle is the basic defect that allows persistance of the cloacal membrane cephalad to the fused phallus. Depending on the degree of caudal displacement and the exact timing of rupture of the membrane, varying severity of the abnormality would be produced from glandular epispadias to cloacal extrophy. Patton and Barry, 1952.

2. A persistant connection of the bladder and allantios results in a urachal abnormalities. This defect can either be in the form of a fistula from the bladder. (False incontinence cause) or a cystic structure along the same pathology. These defects usually occur about the ninth week in utero. Marshal; 1978

3. Posterior urethral valves:

The urethra can frequently have anomalous development, including posterior urethral valves, which are probably more common than was previously recognized.

They can be divided into three types:

Type I: The most common, arise from the base of the veramontanum and extend superiorly toward the external sphincter. They may be a variant of a normal mucosal pattern.

Type II: Asymptomatic mucosal folds can be seen extending from the veramontanum toward the bladder neck.

Type III: A diaphragmatic constriction. The incorporation of the wolffian ducts into the urethra may play a role in this anomaly because posterior urethral valves occur in the same anatomic location.

B. Ureteral Anomalies:

Ectopic ureteral orifices -A cause of false incontinence of urine. It has a high association with ureteral duplication. Ectopic orifices generally refer to ureteral orifices not in the trigone and usually not in the bladder in male the most common site is the prostatic urethra ; but drainage into the seminal vesicle or vas deference has been reported. Marshal, 1978.

ANATOMY OF URINARY CONTINENCE MECHANISM IN MALE

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Normal continence in the male is achieved by the action of the functional urethral sphincter, comprising fibroelastic fibers, smooth muscle and external sphincter muscles.

Male continence is divided according to anatomical and neural distribution of element into:

1. Proximal urethral mechanism (Sphincter) P.U.S.
   a) bladder neck area.
   b) prostatic urethra above the veramontanum.
2. Distal urethral mechanism (sphincter) D.U.S.
   a) Prostatic urethra below the veramontanum.
   b) External sphincter area.

. Basic tonus . Voluntary Activity. (Raz,s.1978

A. Anatomy of bladder neck and urethra

The urinary bladder is a hollow musculo membranous organ lined by transitional epithelium. Functionally, it may described as consisting of the body and base regions.

The smooth muscle fibers of the bladder body were described as being composed of three layers, the external and internal longitudinal layers; and the middle layer, which is the thickest and is composed of circularly running muscle fibers. These fibers run from plane to