CONGENITAL CHORDEE

THESIS

SUBMITTED FOR THE PARTIAL FULFILMENT

OF THE DOCTORSHIP DEGREE IN

GENERAL SURGERY

BY

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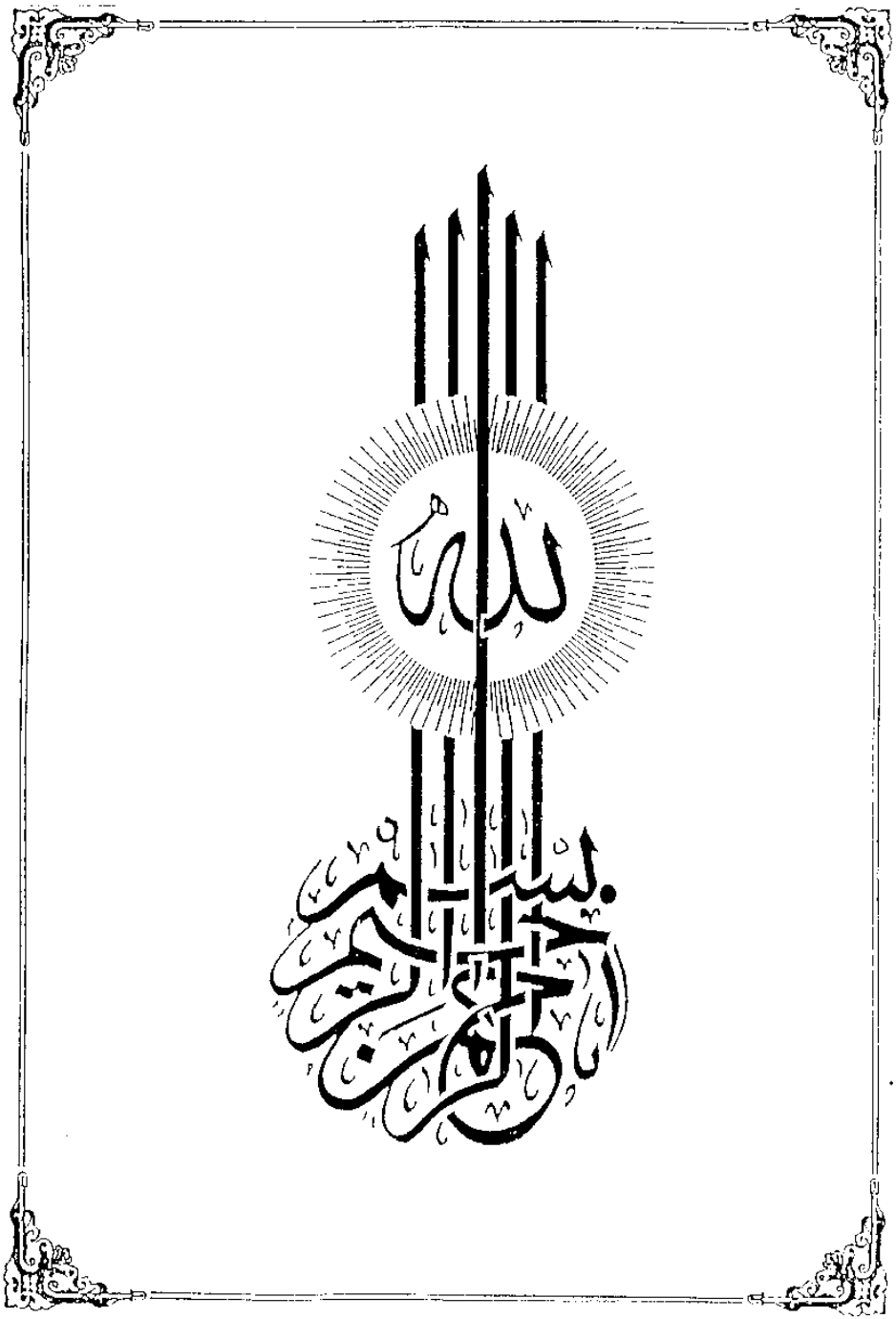
1992



TO THE MEMORY OF MY FATHER

TO MY MOTHER

TO MY WIFE AND MY SON

ACKNOWLEDGEMENT

With may greatest pleasure, I wish to acknowlege may indebtedness to Professor Dr. SAID DERAZ ,Professor of Surgery Ain Shams University who kindly spared a lot of his valuable time to direct my by useful instructions, valuable aduice and interest in this work.

I am deeply indebted to Professor Dr. MOHAMED REDA KHORCHID, Professor of anatomy, Ain Shams University, to whome I express may gratitude for his continuous keen supervision, sincere encouragement and for time he devoted for this work.

I, also, wish to express my deepest thanks to Professor. Dr. ABDEL-WAHAB EL-KASSABY , Professorof Urology, Ain Shams University, for his remarkable help. His encouragement and advice were of great value in putting this work in shape.

I am greatly thankful to Dr. HATEM SHERIF, Lecturer of Surgery, Ain Shams University for his remarkable help, cooperation, constant support and continuous keen supervision throughout this work.

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INTRODUCTION

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Congenital chordee is almost always associated with hypospadias. It is the second most common malformation of the male genitalia after crypt-orchidism. In this case the penis is curved and this curvature becomes more severe during erection sometimes preventing normal sexual activity. Chordee is usually a broad band of subcutaneous fascial tissue which extends from the existing meatus to the glans causing a ventral curvature of the penis, its etiology is poorly understood *(Duckett, 1986)* some have suggested that adherence of skin to the distal hypolastic urethera is the element that causes chordee and that correction of the bend may be achieved simply by freeing the skin attachments *(Allen and Spence 1968)*. Others believed that chordee exist at a deeper level, the tissues of the corpus spongiosum and urethra distal to the hypospadiac meatus persisting as chordee tissue *(Kaplan and Lamm 1975-Kaplan and Brock 1981)*. Chordee may result from differential growth of dorsal and ventral aspects of the corpora *(Bellinger 1981)*.

The aim of this study is to understand the anatomy of chordee and its appropriate management. To try to decide

whether the fibrous process is a progressive one or not.

This will help to estimate the proper time for surgical interference to repair the defect.

ANATOMY OF THE PENIS

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The penis is a pendulous erectile organ, it is divided into three portions, the root, the body and the glans. The root lies in the superficial perineal pouch and provides fixation and stability. The body which constitutes the major part is composed of three cylinder like masses. The left and right cavernous bodies and the spongy body of the urethra *(Cockett 1979)*.

Each corpus is enclosed in a fascial sheath, the tunica albuginea, and all are surrounded by a thick fibrous envelope known as Buck's fascia *(Tanagho 1984)*. These corporae are capped distally by the glans which is the distal expansion of the corpus spongiosum, it is conical and normally covered by the loose skin of the prepuce. (Fig. 1)

The internal surface of the prepuce is a semimucous membrane similar to that covering the glans. This surface of the prepuce contains sebaceous glands which secrete smegma. On the ventral aspect of the glans the frenulum, a well defined median fold of skin is attached from the lower angle of the uretheral meatus to the prepuce.

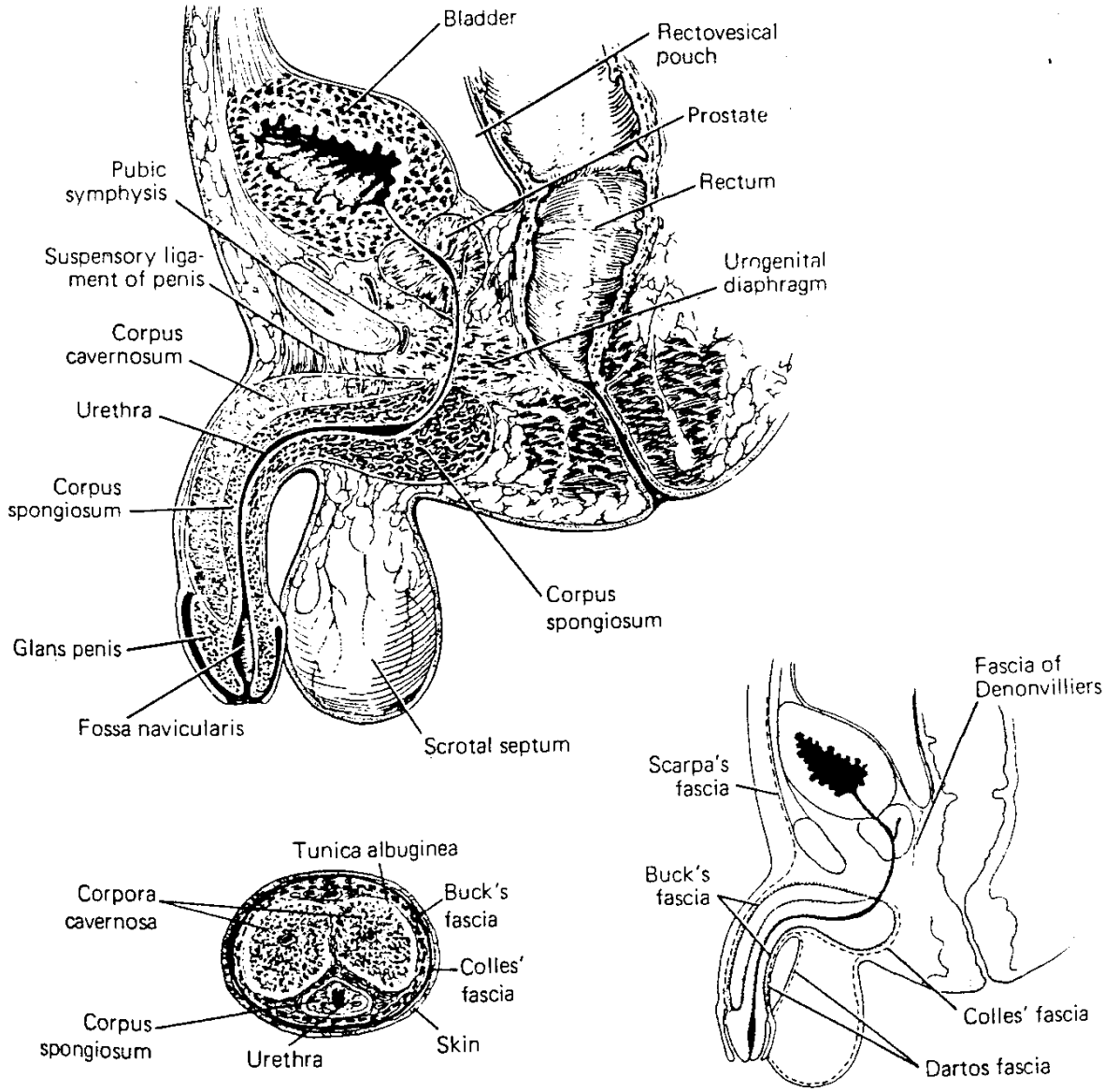

Figure 1 Top : Relations of the bladder, prostate, seminal vesicles, penis, urethra, and scrotal contents Lower left : Transverse section through the penis. The paired upper structures are the corpora cavernosa. The single lower body surrounding the urethra is the corpus spongiosum. Lower right : Fascial planes of the lower genitourinary tract. (After Tanagho 1988).

The cavernous bodies originate at the mid portion of the ischiopubic rami, and are firmly attached to the periosteum of the descending pubic rami and the inferior surface of the urogenital diaphragm.

Their bodies are united side by side in the body of the penis and have blunt ends at the base of the glans penis. The perineal portion of the covernous bodies is covered by the ischiocavernous muscle and the bulb of the urethra is covered by the bulbocavernous muscle.

The spongy body is slender and erectile and lies along the ventral groove of the paired cavernous bodies. Posteriorly, at the root,the spongy body expands to form the bulbous urethra which is invested by the bulbocavernous muscle. Anteriorly at the end of the penis, the spongy body enlarges to form the glans penis. The spongy body serves as an envelop around the urethra from the urogenital diaphragm to the external urethral meatus which opens at the glans. (Fig. 2).

The weight of the body of the penis is supported by two ligaments both continuous with the fascia of the penis and consisting very largely of elastic fibres *(Wiliams and*

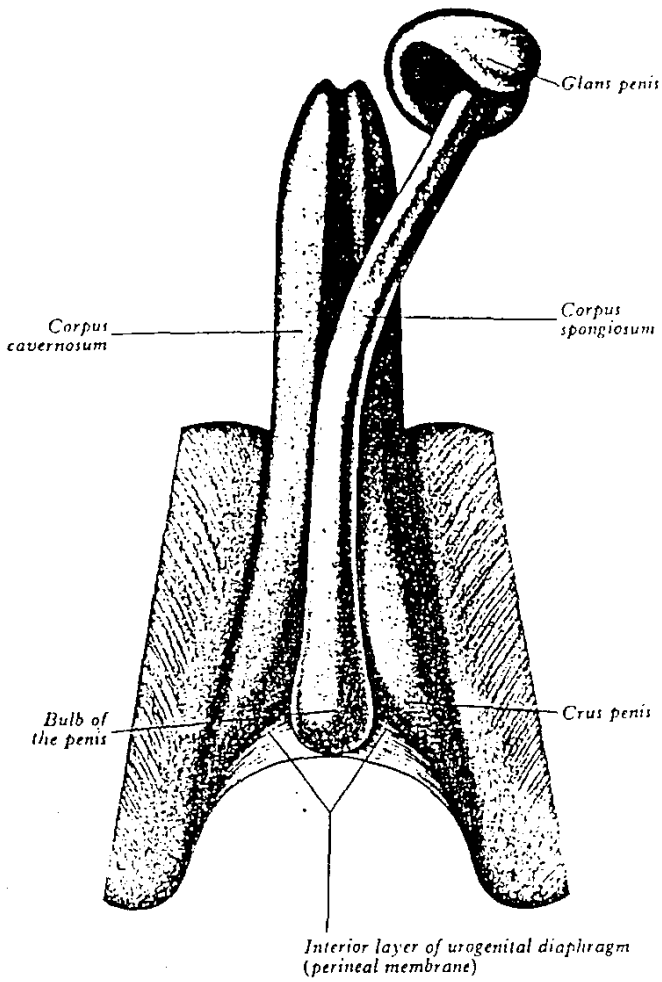

Figure (2)

Anatomical structures of the penis (After Warwick and Williams, 1973).

Warwick 1984). The fundiform ligament springs from the lower part of the linea alba and splits into two lamellae which passes one on each side of the penis and unite below with the septum of the scrotum. The suspensory ligament is inferior or deep to the fundiform ligament, it is triangular in shape and is attached above to the front of the pubic symphisis, below it blends with the fascia of the penis on each side of the organ.

The skin covering of the penis is remarkable for its thinness, its dark colour and its looseness of connection with the fascial sheath of the organ.

The spermatic fascia or dartos fascia is the loose layer of connective tissue immediatly beneath the skin. Superficial lymphatics and the dorsal veins of the penis are located in this fasica. Beneath the dartos fascia is the Buck´s fascia which surrounds the corpora cavenosa and splits to contain the corpus spongiosum separately. The dorsal neurovascular bundle lies deep to Buck´s fascia in the groove between the corpora cavernosa *(Duckett 1986)*.

Histology :

The corpora cavermosa, the corpus spongiosum and