EVALUATION OF THE ROLE OF RETHROCYSTOSCOPY IN THE DIAGNOSIS OF CASES OF CHRONIC CYSTOPROSTATITIS

Thesis
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INTRODUCTION

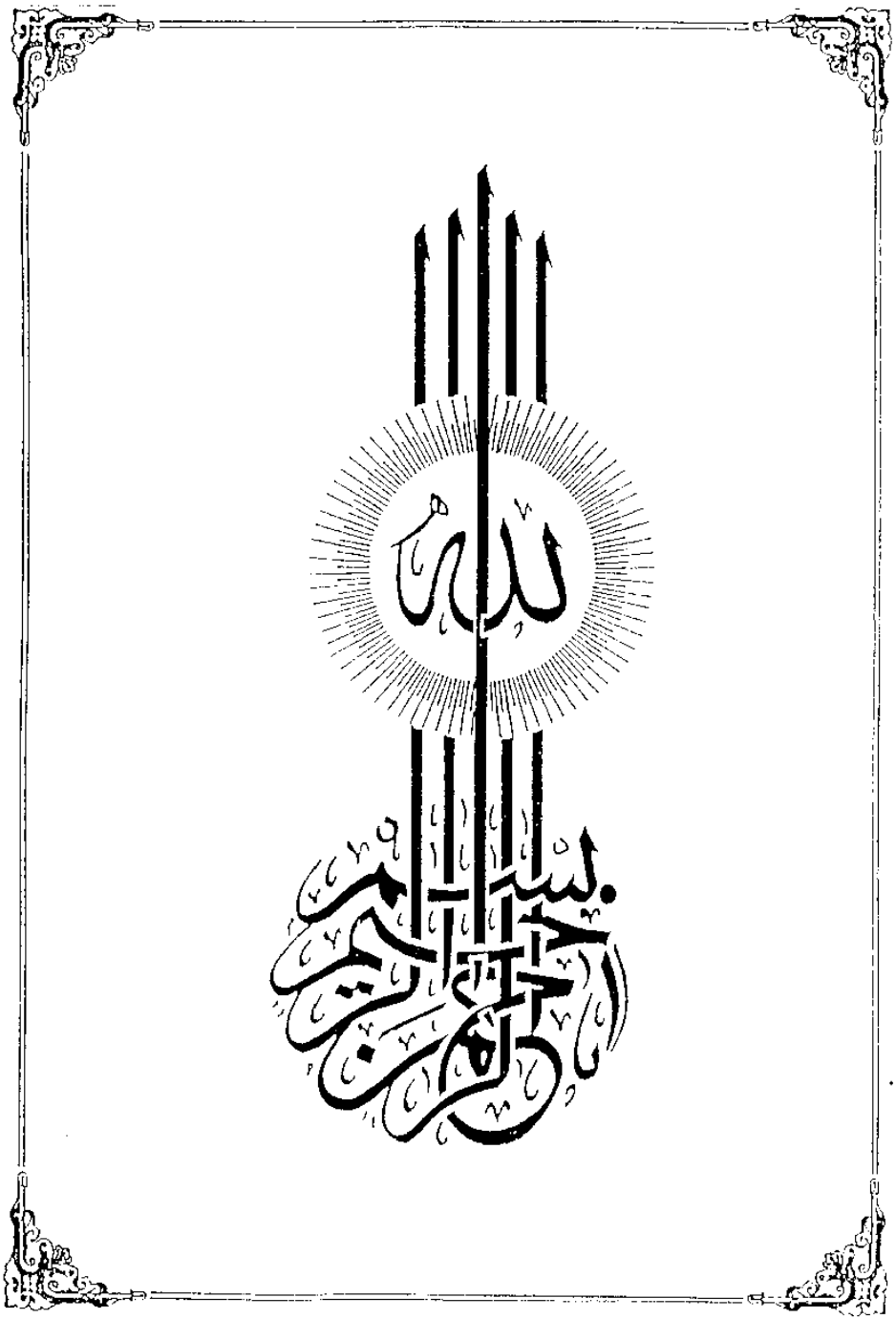
Prostatitis remains a common but often confusing ailment that rarely affects prepubertal boys but frequently affects adult men. Whereas little information is available concerning the true incidence of prostatitis, a National Health Center for Health Statistics study indicates that during 1977 to 1978 there were 76 annual office visits per 1000 men for genitourinary tract problems.

Most patients with chronic prostatitis have poor understanding of their condition, and many are generally unhappy with the results of their treatment. Moreover, many clinicians are frustrated in their attempts to treat patients with prostatitis. Unless the patient responds quickly to therapy, which seldom is the case, the tendency is for the clinician to refer the patient else where.

It is now recognized that prostatitis occurs in several distinct forms or syndromes. These syndromes have separate causes, clinical features, and sequelae. Proper clinical management, therefore, is possible only if the clinician is specific in diagnosis and therapeutic strategy is followed **(Meares, 1992)**.

The hallmark of chronic bacterial prostatitis is the occurrence of relapsing urinary tract infection caused by the same pathogen, the organism persists unaltered in prostatic fluid during therapy with most antimicrobial agents because most of these drugs accumulate poorly in prostatic secretions **(Meares, 1980)**.

The urine may be sterilized and symptoms controlled during medical therapy; however, discontinuation of drug therapy often eventually results in reinfection of urine by the prostatic pathogen and recurrence of symptoms **(Meares, 1986)**.



Most prostatic infections are caused by a single pathogen: however, infections involving two or more strains or types of bacteria occur occasionally.

Chronic bacterial prostatitis is caused by gram-negative bacteria. The role of gram-positive bacteria in the etiology of prostatitis is controversial. The recent work of several researchers suggests that gram-positive bacteria other than enterococci seldom cause significant prostatitis **(Meares, 1986)**.

clinical observations suggested that the bacteria in the prostatic fluid were somehow protected from the action of antimicrobial agents.the transport of these drugs across human lipid membranes (such as prostatic epithelium) is governed by the non ionic diffusion of antimicrobial agents from the plasma across the prostatic epithelium into prostatic fluid.

So, the concentration within the prostatic acini, and the diffusibility of these drugs are determined by their lipid solubility, pKa of the drug, binding to plasma proteins, pH gradient and finally whether the drug is an acid or a base **(Meares, 1992)**.

Diagnosis of chronic bacterial prostatitis is still best confirmed clinically by performance of bacteriologic culture that localize the pathogen to prostatic secretion as what reported by **Meares and stamey (1968)**.

Most of cases of prostatitis relapsing, or resistant to medical treatment are due to missed underlying cause, and urethrocystoscopy is indicated mainly to evaluate whether these underlying factors which include eg. prostatic enlargement, urethral stricture, specific cystitis, prostatic calculi, bladder stone, bladder neck contracture **(Meares,1988)**.

So, the aim of this study is to assess the value of urethrocystoscopy in the management of resistant, relapsing and complicated cases of chronic prostatitis.

REVIEW OF LITERATURE

ANATOMY

ANATOMY OF THE PROSTATE GLAND

General Description:

The prostate gland is a composite structure which includes glandular elements and a stroma of collagenous and muscle tissue.

The prostate gland is conical in shape and has a base, apex, anterior, posterior, and two inferolateral surfaces.

The normal prostate reaches 20 plus or minus 6gm in men between 21-30 years old and this weight remains essentially constant with increasing age unless B.P.H. develops, **(Berry et al., 1984).**

It measures about 3.5 cm transversely at its base and about 2.5 cm in its vertical and anteroposterior diameter.

Structure of The Prostatic Parenchyma:

Although the prostate is considered to be a glandular organ, it contains a relatively large amount of fibromuscular stroma. This fact has been emphasized by the stereometric studies demonstrating that in the normal gland the fibromuscular stroma constitutes about 45% of the volume density of the prostate gland. So, it can be described as a musculoglandular structure **(Bartsch et al., 1979).**

According to **McNeal (1972)** the prostate has a peripheral zone, a central zone, and a transition zone, an anterior segment and a preprostatic sphincteric zone. Using sagittal, coronal, and oblique coronal sections, he divided the prostate into four distinct zones; each zone makes contact with specific portion of the prostatic urethra (Figs.1 & 2).

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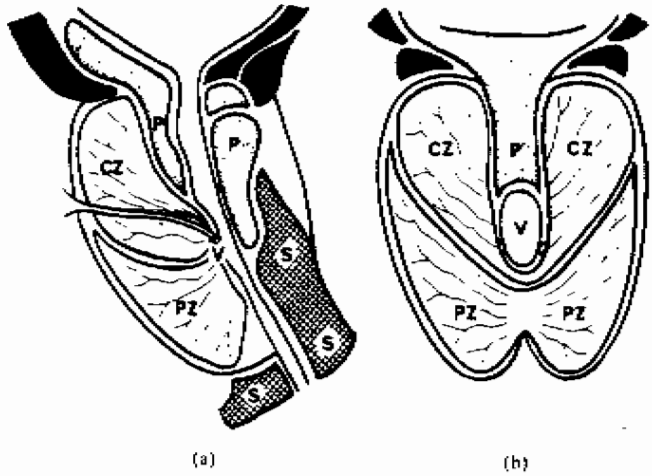

Fig. 1: The morphology of the prostate showing central zone (CZ) and peripheral zone (PZ) in diagrammatic midine sagital section (a) and coronal section behined the urethra (b). P = preprostatic sphincter; S = striated sphincter of the urethra and external sphincter; V = verumontanum. (From Blacklock, N.J.: surgical anatomy of the prostate. Scientific foundation of urology (3rd Ed.), William Heinemann medical book, Oxoford, 1990).

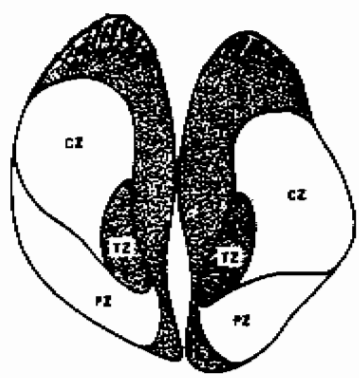

Fig. 2: Coronal section of the prostate through the urethra showing the central and peripheral zones and the location of the transitional zone (TZ). (From Blacklock, N.J.: surgical anatomy of the prostate. Scientific Foundation of Urology (3rd Ed.), William Heinemann medical book, Oxoford, 1990).

1- The Anterior Fibromuscular Stroma:

This is a thick sheet of fibromuscular tissue that covers the entire anterior aspect of the prostate. It composes up to one third of the total bulk of the prostate and is entirely lacking the glandular elements. A continuous sheet of smooth muscle surrounds the urethra proximally at the bladder neck where it merges with the internal urethral sphincter and the detrusor muscle from which it originates (Fig.3).

Near the apex the smooth muscle merges with the transverse loops of striated muscles that represent a proximal extension of the external sphincter along with the anterior aspect of the distal segment at the prostatic urethra.

2- The Peripheral Zone:

This is the largest anatomic subdivision of the prostate, containing 75% of the total glandular tissue of the prostate. It encloses the central zone in a concavity on its upper anterior aspect and below the verumontanum it comes into direct contact with the lower prostatic urethra on its posterior and lateral aspects.

The ducts originate as a double row of orifices in the posterolateral recesses of the urethra below the verumontanum extending to the apex of the prostate.

These ducts course first backwards into the substance of the zone and swing laterally and anteriorly to end in small, simple, round acini.

Some of the terminal ducts course anteriorly to form a shallow cup around the striated sphincter and anchor into the lateral extent of the anterior fibromuscular stroma.This is the tissue sampled in most random biopsies of the prostate **(BlackLock, 1990)**.

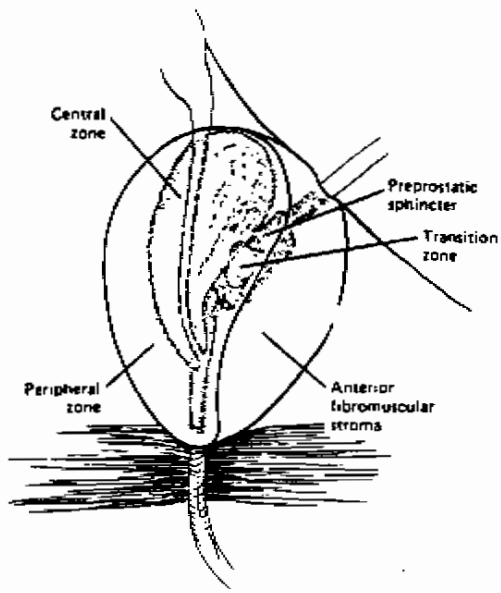

Fig. 3: Anatomy of the prostate gland. (From Tanagho, E.A.: Anatomy of the genito urinary tract. Smith's General Urology, (12th Ed.) Appleton and lang med. pub, Calif., 1988).

3- The Central Zone:

This is the smaller of these comprising about less than one third of the total gland mass. It comes into contact with the urethra only at the upper end of the verumontanum where its duct orifices open around the ejaculatory duct orifices.

It forms the base of the prostate, lying beneath the bladder neck and on the posterior and posterolateral aspect of the preprostatic sphincter. It is wedge shaped with its apex at the verumontanum.

The central zone is penetrated on its upper posterior surface by the vas deferens and the duct of the seminal vesicle on each side where these unite to form the common ejaculatory duct within its substance before they enter the urethra on either side of the verumontanum.

The definition of central and peripheral zones as distinct and separate entities rests primarily on their morphological differences, secondarily on their sharp anatomic segregation and separate locations of their duct origins from the urethra, thirdly on the differences in histologic appearance (**McNeal, 1972**).

McNeal (1978) has described two further components of the gland. The smaller component, the periurethral gland and the other is the transition zone.

The Preprostatic Glands:

The preprostatic tissues which surround the anteriorly displaced urethra proximal to the upper end of the verumontanum constitute the smallest of the four regions and the most complex in its arrangement of glandular and non glandular elements.

Its main component is a cylindrical smooth muscle sphincter surrounding the entire preprostatic urethra, so termed the preprostatic sphincter which has a sphincteric function at the time of ejaculation to prevent the reflux of seminal fluid into the bladder. It is the downward tubular extension of the deep trigone into the prostate and extends to the level of the verumontanum **(McNeal, 1978)**.

The glandular element of this region can be subdivided on the basis of duct size and location into the periurethral and the transition zone glands which are considered to have a common embryological derivation and that they differ in the degree of duct development and character of the stroma **(McNeal, 1978)**.

The Periurethral Glands:

They are contained within the fibromuscular cylinder of the preprostatic sphincter and constitute about less than 1% of the glandular mass of the prostate (Fig. 3).

These glands are simple straight ducts, a few millimeters in length and are parallel to the urethra. They are inconstant in number and almost microscopic in size with limited branches and few small acini. They are surrounded by collagenous tissue and totally lack the smooth muscle investment of the acini of the central and peripheral zones.

With this morphology and the closure of the lumen of this part of the urethra at the time of ejaculation. They are unlikely to play any role in prostatic function.

Because the smooth muscle cylinder limits the expansion of these glands laterally, they grow proximally towards the bladder neck **(Blacklock, 1990)**.