



SUYASH

Uro Times

A Quarterly News Letter From Suyash Nursing Home
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For Private Circulation Only

MANAGING BPH- PART 1 Dr Sharad Somani

PROSTATE : ANATOMY AND PHYSIOLOGY

Introduction

The prostate is an exocrine gland of the male reproductive system.

Women do not have a prostate gland, although women do have tiny paraurethral skene's glands connected to the distal third of the urethra in the prevaginal space that are homologous to the prostate.

Function

The main function of the prostate is to store and secrete a clear, slightly alkaline fluid that constitutes 10-30% of the volume of the seminal fluid.

Secretions

In human prostatic secretions, the protein content is less than in 1% and includes proteolytic enzymes, prostatic acid phosphatase, and prostate-specific antigen.

Structure -

A healthy human prostate is slightly larger than a walnut. Normal prostate weighs around 18 g. It is located in front of the rectum and just below the bladder. It surrounds the urethra just below the urinary bladder and can be felt during rectal examination. Portion of the urethra within the prostate is called the prostatic urethra and it merges with the two ejaculatory ducts. Prostate is composed of approximately 70 % of glandular elements and 30 % of fibromuscular stroma.

Zones of Prostate

Glandular elements of the prostate have been divided into discrete zones.

Peripheral zone (PZ)

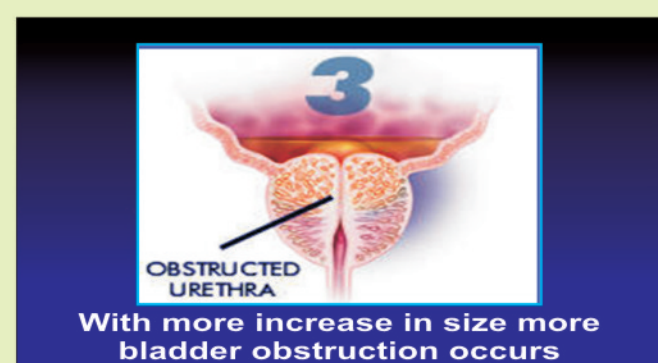
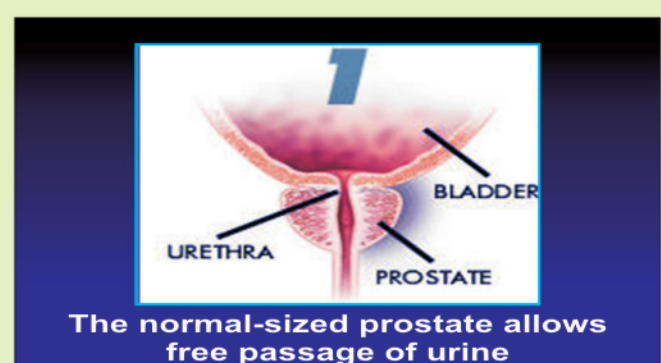
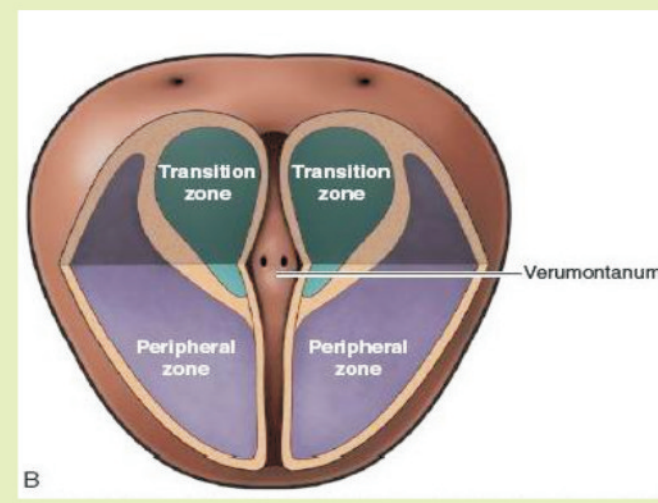
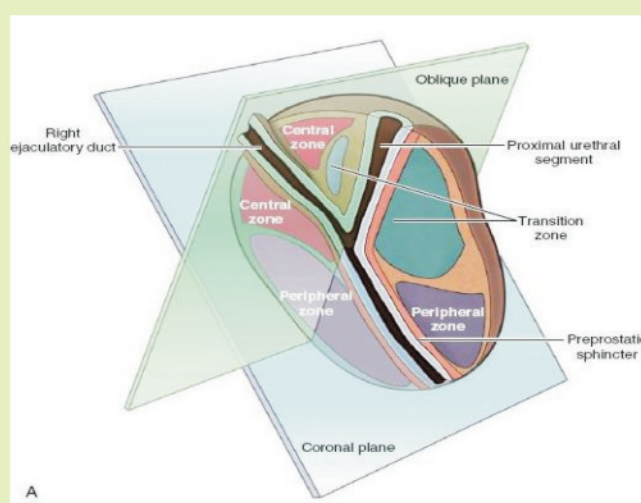
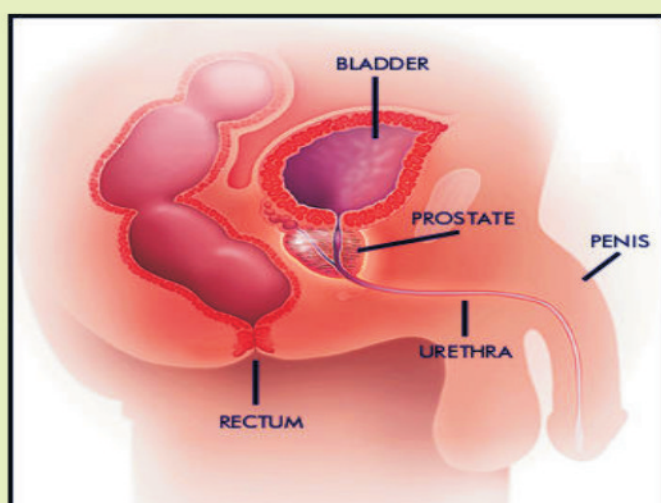
It composes up to 70 % of the glandular tissue of prostate gland and covers posterior and lateral aspects of gland. 70 % of the prostatic cancers originate from this zone and it is the zone commonly affected by chronic prostatitis.

Central zone (CZ) It constitutes approximately 25% of the glandular tissue of prostate.

Transition Zone (TZ) It accounts for 5-10 % of the glandular tissue of prostate. It commonly gives rise to benign prostatic enlargement.

Anterior fibro-muscular zone Up to one third of prostatic mass may be attributed to anterior fibro-muscular stroma. This zone is devoid of glandular components.

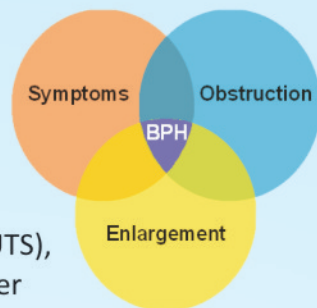
Clinically, prostate is often spoken to have two lateral lobes and a middle lobe which may project in to the bladder in older men. These lobes do not correspond to histological structure in the normal prostate but usually related to pathological enlargement of transitional zone laterally and peri-urethral glands centrally.



BENIGN PROSTATIC HYPERPLASIA - BPH

Definition :

- BPH is a nonmalignant enlargement of the prostate due to excessive cellular growth of both the glandular and the stromal elements.
- BPH is now recognized as a syndrome of three distinct but overlapping clinical entities and can be defined as a clinical syndrome consisting of lower urinary tract symptoms (LUTS), benign prostatic enlargement (BPE) and bladder outlet obstruction (BOO).



Incidence :

- BPH, which usually develops after age of 50, is the most common benign neoplasm of aging men. The incidence of BPH rises with aging.
- The prevalence of histopathological BPH is age dependent, with initial development usually after 40 years of age. By 60 years of age, its prevalence is greater than 50% and by age 85 is as high as 90%.
- Similar to that of histological evidence, the prevalence of bother-some symptoms also increases with age. Approximately one half of all men who have a histological diagnosis have moderate to severe LUTS.

Pathophysiology :

- Pathophysiology of BPH is multifactorial and complex.
- Testosterone & aging are essential for BPH.
- In the prostate an enzyme 5 alpha-reductase converts testosterone to its active metabolite DHT (Dihydrotestosterone).
- It is the Hypothalamo pituitary axis (HPA) which governs the formation of DHT from testosterone.
- Testis contributes to nearly 95% of testosterone in plasma whereas adrenals probably account for less than 5% of testosterone production.
- DHT is a major form of androgen found in prostate and is fivefold higher than testosterone.
- DHT & testosterone levels are controlled by negative feed back mechanism.
- The prostatic levels of DHT as well as receptors remain high during aging.
- DHT is not only required for normal cell proliferation and differentiation in prostate but actively inhibit cell death.
- Normally there is a balance between cell proliferation and cell death.
- The interaction between growth factors and DHT may alter the balance of cell proliferation versus cell death to produce BPH.
- The other factor thought to be responsible for BPH symptoms is alpha receptor over activity.
- The receptors in prostate are mainly of alpha-1A type (70%).
- Stimulation of alpha - adrenergic receptors on the bladder neck, prostatic capsule, and stromal tissue results in constriction of the urethral lumen.
- Thus there are 2 components in BPH.
- Static component - Caused by enlargement of prostate gland
- Dynamic component -Due to increased smooth muscle spasm caused by alpha-receptor over activity

BPH : Presenting Symptoms

The clinical manifestations of BPH can range from minimally bothersome urinary symptoms to complications such as acute urinary retention (AUR) and renal failure.

The urinary symptoms are collectively termed as lower urinary tract symptoms (LUTS).

In clinical practice, patients usually have LUTS for years before they seek consultation, and they do not report symptoms unless this condition significantly affects their quality of life.

LUTS are of 2 types -

- Irritative
- Obstructive

Irritative symptoms also known as storage symptoms are -

- Frequency - Passing of urine frequently (more than 7 times)
- Urgency - A strong desire to pass urine which is difficult to defer before reaching the toilet.
- Urge incontinence-urgency followed by leaking of urine
- Nocturia – Required to get up at night frequently (>2 times)

Obstructive Symptoms also known as voiding symptoms are –

- Weak stream of urine
- Straining at the time of urination
- Hesitancy – stopping & starting again for urination
- Terminal dribbling of urine
- Feeling of incomplete emptying

BPH may be associated with sexual dysfunction and adversely affects quality of life.

BPH – Progression and Complications

BPH if left untreated may progress and patient may present with the complications of BPH.

These are:

- Recurrent urinary tract infections
- Bladder stones
- Haematuria
- Acute urinary retention (AUR)
- Bladder decompensation
- Urinary incontinence
- Renal dysfunction and eventually renal failure

These complications may necessitate surgical intervention.

Acute urinary retention (AUR) is a highly morbid event and may necessitate emergency hospitalization and surgery.

Both AUR and need for surgery represent distinct endpoints in the disease progression of BPH.

BPH-Diagnosis

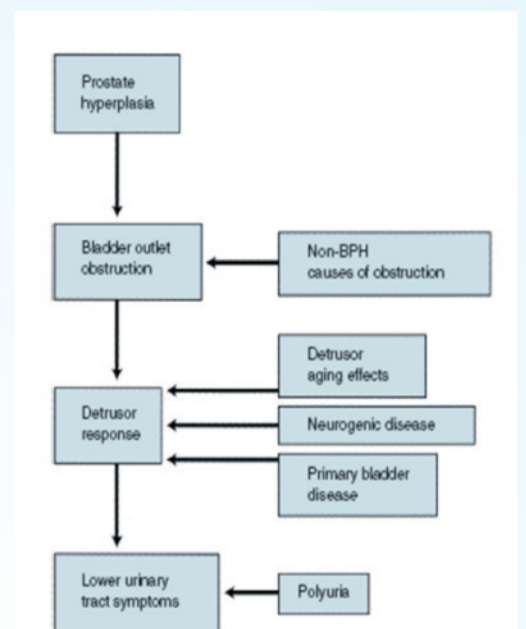
LUTS are not specific to BPH.

Many urological and non urological conditions can also cause LUTS.

It is therefore critical that probable differential diagnosis be considered when evaluating men with LUTS.

Differential diagnosis includes-

- Urinary tract infection
- Bladder stones
- Urethral stricture
- Bladder cancer
- Prostate cancer
- Neurogenic bladder
- Prostatitis-
Bacterial,
chronic nonbacterial
- Detrusor hyperreflexia or overactive bladder
- Medication side effects (anticholinergic or antidepressant drugs)



Medical History

Medical history should be taken to identify other causes of voiding dysfunction or co morbidities that may complicate treatment. This includes medical conditions and symptoms that lead to bladder dysfunction or excessive urine production (Polyuria), family history of prostate disease (BPH and cancer) etc.

Symptom Assessment

International Prostate Symptom Score (IPSS) is a questionnaire which asks about the urinary symptoms of patient and their impact on quality of life. Symptom quantification using IPSS is of major importance in determining the severity of disease, in documenting the response to therapy, and in detecting symptom progression.

IPSS includes 7 questions related to LUTS with score for each symptom ranging from 0 to 5. So the maximum score is 35.

IPSS score						
AUA Symptom Index						
Questions to be answered	Circle number on each line					
	Not at all	Less than 1 time in 5	Less than half the time	About half the time	More than half the time	Almost always
1: Over the past month, how often have you had a sensation of not emptying your bladder completely after you finished urinating?	0	1	2	3	4	5
2: Over the past month, how often have you had to urinate again less than 2 hours after you finished urinating?	0	1	2	3	4	5
3: Over the past month, how often have you found you stopped and started again several times when you urinated?	0	1	2	3	4	5
4: Over the past month, how often have you found it difficult to postpone urination?	0	1	2	3	4	5
5: Over the past month, how often have you had a weak urinary stream?	0	1	2	3	4	5
6: Over the past month, how often have you had to push or strain to begin urination?	0	1	2	3	4	5
7: Over the past month, how many times did you most typically get up to urinate from the time you went to bed at night until the time you got up in the morning?	0	1	2	3	4	5
Sum of 7 circled numbers (AUA Symptom Score)						

Depending on the IPSS score, Patient's symptoms may be classified as

Severity	AUA Score	Others
Mild	0-7	Qmax < 15 PVR > 50
Moderate	8-19	Qmax < 10 PVR > 100 D instability
Severe	20-35	Qmax < 5 PVR > 200 Complication

Physical Examination

Digital rectal examination (DRE)
Focused neurological examination

DRE- Mandatory part of examination to assess prostate size and feel.
Digital rectal examination tends to underestimate true prostate size.

Urine Analysis

To screen for haematuria and urinary tract infection (UTI).

Voiding charts (Diaries)

Patients are instructed to record fluid intake and time and volume of each void for 2-7 days. Increased urinary frequency secondary to excessive fluid intake as well as severity of frequency and incontinence can be assessed.

S PSA (Serum Prostate-specific antigen)-

Prostate-specific antigen (PSA) is a protein produced by normal prostate cells. This enzyme participates in the dissolution of the seminal fluid coagulum and plays an important role in fertility. S PSA has established itself as the most important tumor marker for prostate cancer.

However S PSA is also elevated in BPH, prostate inflammation or infection, and prostate or perineal trauma, thus PSA is organ specific and not cancer specific.

Normal range of serum PSA is 0 - 4 ng / dl

Urinary flow rate-

This is measured by uroflowmetry.

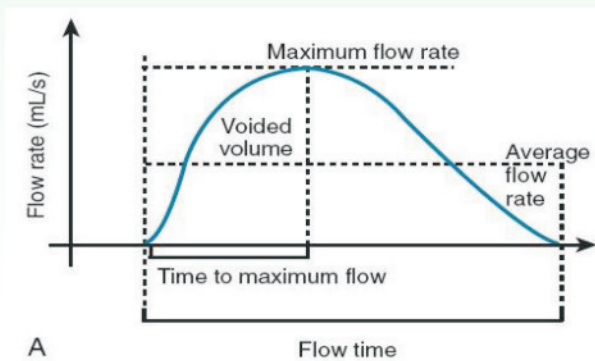
It is a simple noninvasive procedure wherein patient is asked to urinate in a special urinal equipped with a machine with a measuring device.

It measures -

- Urinary flow rate - Average & Maximum urinary flow rate
- Volume voided
- Time for voiding

Maximum urinary flow rate (Q max)

As the name suggests, it is the measure of maximum urinary flow rate attained during the act of voiding.



Normal Values -

In young men Q max greater than 15-20 ml/sec is normal. This declines with age.

Men with a Qmax less than 10 ml/sec are more likely to have urodynamic obstruction

Limitation of Uroflowmetry -

It does not differentiate between decrease in the urinary flow rate due to bladder dysfunction or due to bladder outlet obstruction.

Transabdominal ultrasonography

It is simple noninvasive method to assess prostate size (though not accurate), upper tract for obstructive uropathy also referred to as back pressure changes and post void residual urine volume.

Transrectal prostate ultrasound

Transrectal ultrasonography (TRUS) gives very accurate measure of prostate volume and also aids in measuring PVR or performing prostate biopsy when indicated.

Postvoid residual urine volume (PVR)

Postvoid residual urine volume is the amount of urine remaining in bladder at the end of urination. The presence of PVR in patients with BPH is commonly associated with urodynamically proven bladder outlet obstruction.

PVR can be measured by ultrasonography or by catheterisation after voiding.

High baseline PVR volume may predispose patients to occurrence of serious BPH complications such as urinary tract infections, bladder calculi, renal impairment etc.

Clinical evidence suggests that patients with PVR volume greater than 50cc are about 3 times more likely to develop acute urinary retention. Large PVR volumes (more than 350mL) may indicate bladder dysfunction and predict a slightly less favorable response to treatment. Because of large test-retest variability and a lack of appropriately designed outcome studies, it is not feasible to establish a PVR "cut-off point" for decision making.

Pressure-flow urodynamic studies

Pressure-flow urodynamic study although invasive, is the only test that directly measures the relative contribution of bladder and bladder outlet and the contributions of prostate to lower urinary tract function, dysfunction or symptoms.

Pressure-flow studies are indicated in evaluation of men with LUTS prior to invasive therapy or for those who have failed prior surgical therapy or who have concomitant neurologic disease known to affect bladder function (e.g. stroke, Parkinson's disease and neuropathy).

Urethrocytoscopy

Usually not required for diagnosis or decision making. It may be appropriate in men with a history of microscopic or gross haematuria, urethral injury, bladder cancer, or prior lower urinary tract surgery.

Urine cytology

It is recommended only if patient is suspected to have transitional cell carcinoma of bladder or carcinoma in situ.

Managing BPH Part -2 Surgical Non Surgical Treatment In Next Issue



State Of The Art German
Techonology 50 W Holmium
Laser (Auriga International)

Inauguration of Laser unit at Suyash Nursing Home by Hon. Minister Shri. Rajeshji Tope

PRE-MATURE EJACULATION (PE)

Dr Nagesh Nagapurkar

Introduction :

Human sexual function include libido, erection, ejaculation & orgasm. Ejaculatory dysfunction is a common & distressing cause of male sexual difficulties. Premature ejaculation is most common sexual dysfunction & affecting 20-30% of male population.

The personal nature of PE & hesitancy of both patient & clinicians to raise the subject means that only a small proportion of those affected seek or receive professional help.

Definition :

International society of sexual medicine (ISSM) : Life long PE is defined as " A male characterized by ejaculation which always or nearly always occurs prior to or within approximately 1 min of vaginal penetration, the inability to delay ejaculation on all or nearly all vaginal penetration & negative personal consequence such as distress, bother, frustration & or the avoidance of sexual intimacy."

Type of PE :

- 1) Primary : Lifelong
- 2) Secondary : Aquired

Assessment : To achieve a precise diagnosis Specialist often relies on the patient history without further lab or physiological test.

Sexual History

- Onset of duration
- Ejaculatory latency time
- Perceived control over ejaculation
- Past sexual relationship & functioning

Medical History

- Medication
- Past or current infections
- Past trauma

Psychological History

- Guilt & inhibitions
- Misinformation about sex
- Negative sexual experience
- Anxiety
- Depression
- Impact of PE on patient & their partner

Physical Examination

- General / Local
- Vascular
- Endocrine
- Neurological examination

Investigations

- Routine Lab test with Lipid profile
- Hormonal test - sr testosterone, sr FSH/LH, Thyroid function test

Complication of PE:

- Relationship problem, unconsumated marriage
- Fertility problem

Aetiology :

- A) Psychological
 - 1) Hurry to reach climax
 - 2) Guilty feeling
 - 3) Religious myths
 - 4) Erectile dysfunction
 - 5) Relationship Problems
- B) Biological causes:
 - 1) Abnormal Hormonal levels
 - 2) Abnormal Neurotransmitters (Dopaminergic Neurotransmitters)
 - 3) Abnormal Reflex activity
 - 4) Thyroid problems (Hyperthyroidism)
 - 5) Infection & Inflammation of prostate, seminal vesical & urethra
 - 6) Neurological damage due to some accidents
 - 7) Alcoholic or drug addict or on antipsycotic drugs

Treatment :

- A) Psychological counseling
 - Benefits in increasing patients confidence & self esteem.
 - It also help to reduce the burden of self imposed pressure at the time of sexual activity.
- B) Behaviourial modification & cognitive technique also called as sexual therapy:
 - These have short term sucess rate 60-65 %
 - They are effective if combined with pharmaceuticals.
 - Stop - Start - Technique- involve ceasing sexual stimulation before ejaculation & re commencing as the arousal is reduced
 - Other technique- Focus reducing sexual stimulation by changing sex positions, using double condom to decrease penile sensitivity.
 - Yoga therapy.
- C) Pharmacotherapy (For life long) oral drugs.
 - 1) Phosphodiesterase 5 inhibitors.
 - 2) Selective serotonin reuptake inhibitors (SSRIs) which block serotonin alpha dopamine transporters Dapoxetine 30 to 60 mg /day as on demand.
 - 3) Triacyclic antidipresent (clomipramine) not recomended.
 - 4) Alpha blocker (Alfuzosin) chance of retrograde ejaculation.
 - 5) Noradrenaline reuptake inhibitor (Tramadol Hydrochloride).
- D) Application of topical anaesthetic agent to reduce penile sensivity e.g Lidocain - prilocain cream 5% applied 20 to 30 min before sexual activity (Note - a condom must be used to avoid causing numbness in partner)



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FACILITIES AVAILABLE

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- Endoscopic Treatment Of Prostate (TURP)
- LASER - 50 Watt, German Technology Auriga XL excellent energy source for all Urology applications
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- Paediatric Urology (Endoscopy, LASER)
- Male Infertility
- Kidney Transplant
- Laparoscopy
- Video Endoscopy
- Well equipped Operation Theatre
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- C - arm X - Ray machine
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- Uroflometry
- Ultra sonography Department
- Pathology Laboratory
- Digital X-Ray Machine
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Clinically Uroselective Alpha Blocker for Symptomatic BPH Benign Prostatic Hyperplasia

For The Symtomatic Relief of Lower Urinary Tract Spasm

The Most Trusted Brand in OAB Over Active Bladder



85% Reduction in Recurrence of Urinary Stones Superior Efficacy Than Potassium Citrate

For Symptomatic BPH Patients with Enlarged Prostate

Reduces PVR, Effective in the Mangement of AUR for Sexually Active BPH Patients

Due to Infection & Inflammation Diagnostic & Therapeutic Procedures

Antimuscarinics are Recommended As 1st Line Therapy for OAB