



FACULTY OF MEDICINE UROLOGY DEPARTMENT FOURTH YEAR

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BENIGN PROSTATIC HYPERPLASIA

BPH



BPH is a generalised disease of the prostate due to hormonal derangement which leads to enlargement of the gland (increase in the number of epithelial cells and stromal tissue) to cause compression of the urethra leading to symptoms.



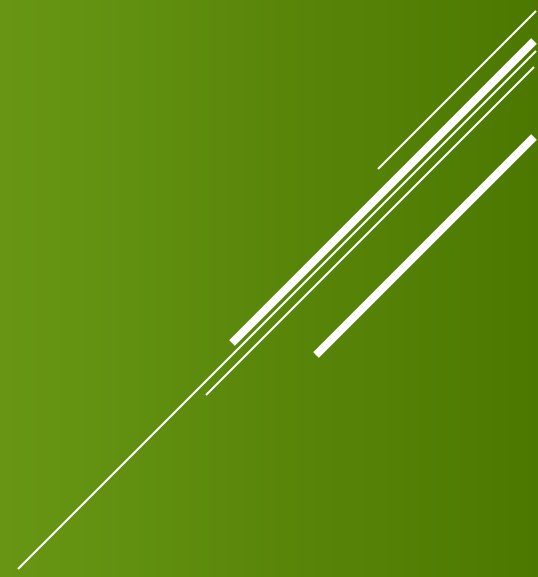
The prevalence of histologic BPH in autopsy studies rises from approximately

20% in men aged 41–50,

50% in men aged 51–60,

over 90% in men older than 80.

INCIDENCE



BPH

PROPOSED ETIOLOGIES

- Cause not completely understood
- Change in hormonal testosterone/estrogen balance
- Induction of prostatic growth factors
- Increased stem cells/decreased stromal cell death
- Accumulation of dihydroxytestosterone, stimulation by estrogen and prostatic growth hormone actions

PATHOLOGY

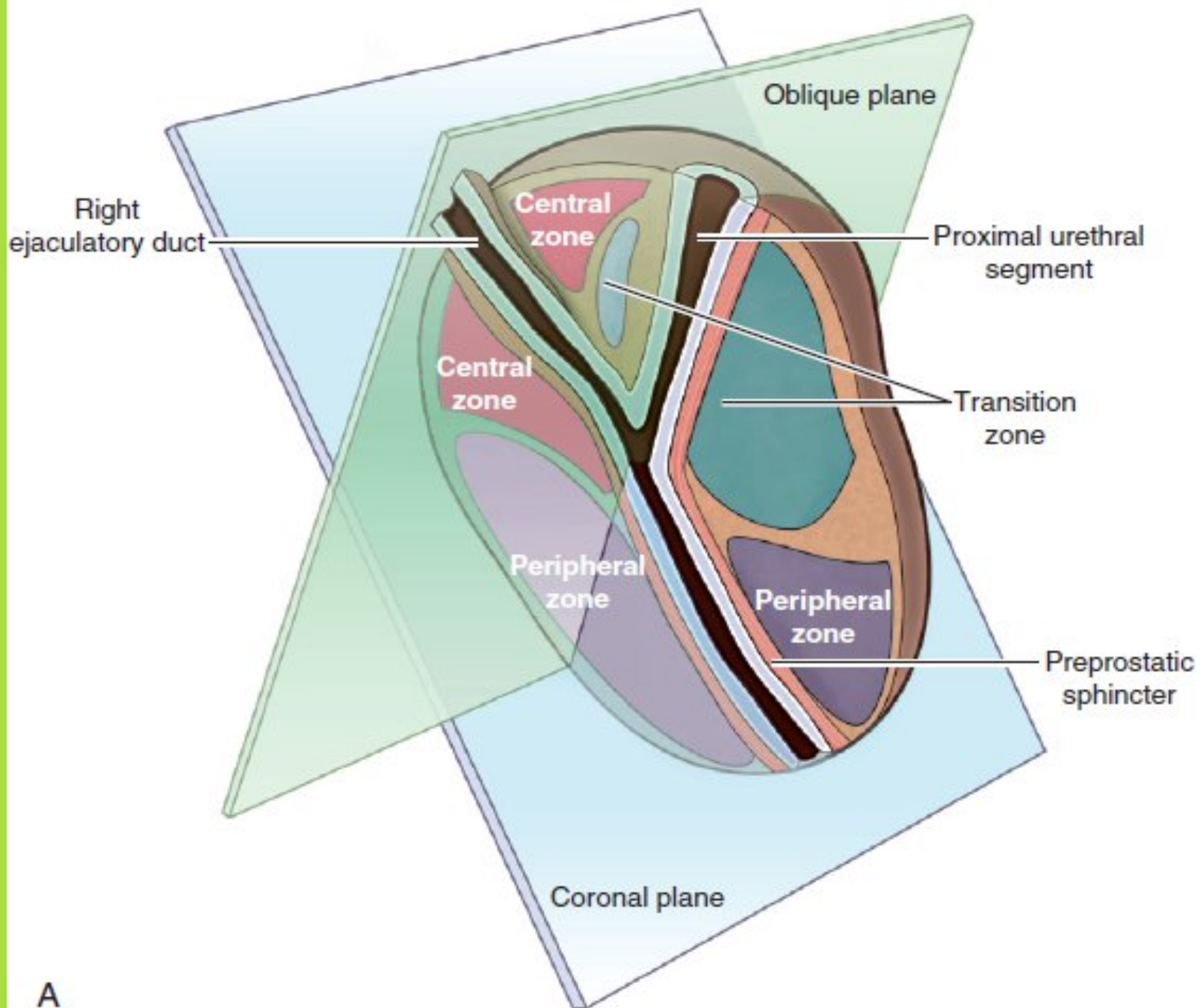
BPH develops in the transition zone.

It is a hyperplastic process resulting from an increase in cell number .

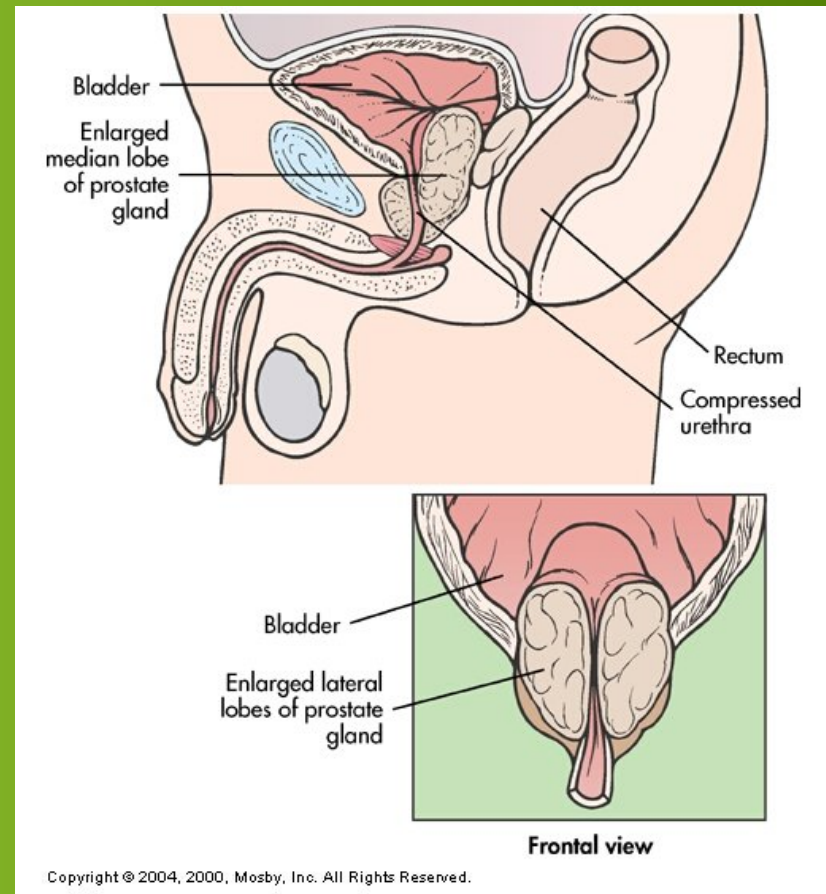
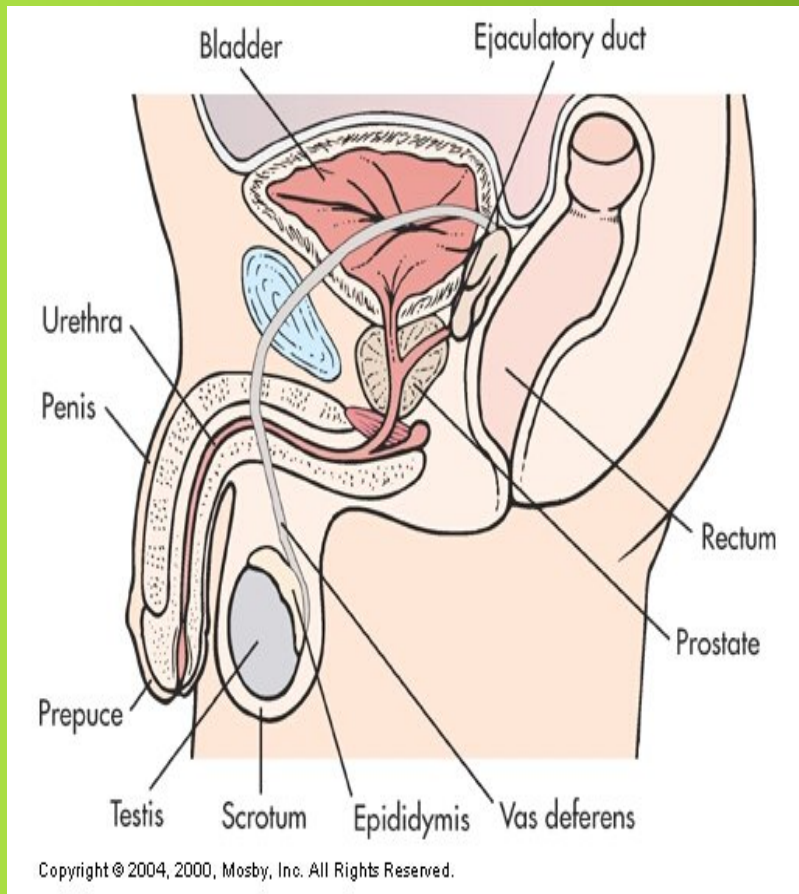
histologic components of BPH , stroma and epithelium.

BPH nodules in the transition zone enlarge, they compress the outer zones of the prostate, resulting in the formation of a so-called surgical capsule.





BENIGN PROSTATIC HYPERPLASIA

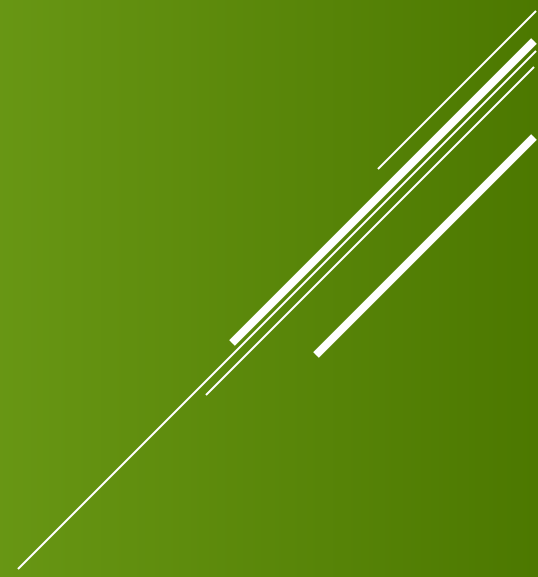


The symptoms of BPH to either the obstructive component of the prostate or

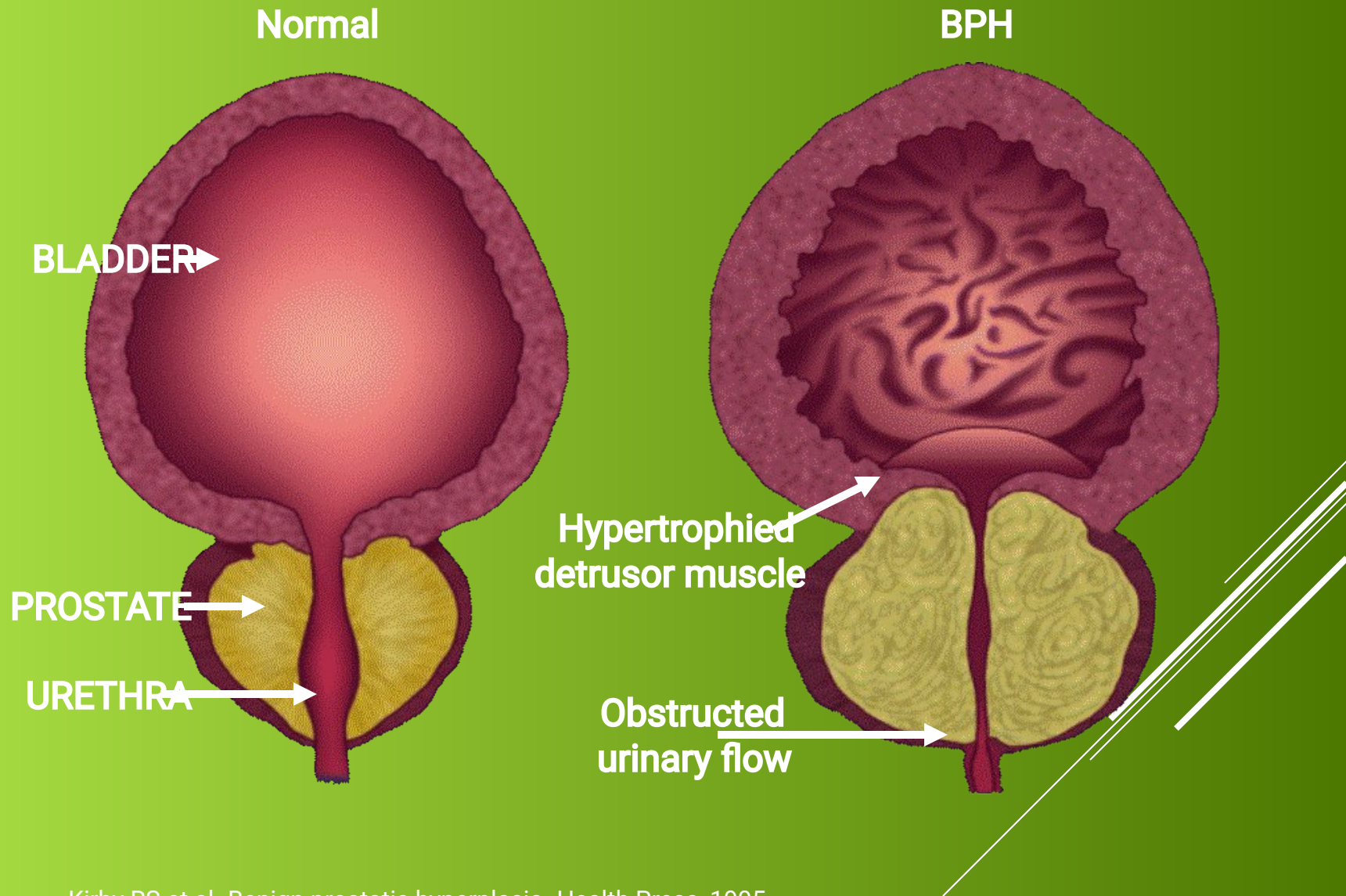
Secondary response of the bladder to the outlet resistance.

The obstructive component can be subdivided into the mechanical and the dynamic obstruction.

PATHOPHYSIOLOGY



BPH PATHOPHYSIOLOGY



1- LUTS (lower urinary tract symptoms)

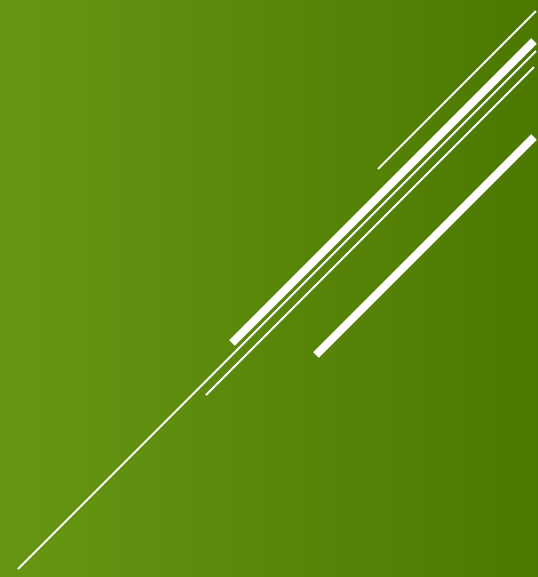
2- Retention

3- Renal failure

4- Overflow incontinence

5- Asymptomatic

PRESENTATION



LUTS include:

- Difficulty starting a urine stream (hesitancy)
- Straining
- Intermittency
- Decreased strength of the urine stream (weak flow).
- Dribbling after urination.
- Feeling that the bladder is not completely empty.
- Pain or burning during urination (dysuria).
- Waking at night to urinate (nocturia).
- Frequency of urination.
- A sudden, uncontrollable urge to urinate

COMPLICATIONS

Urine retention

UTI

Bladder Calculi

Renal failure

Hematuria

Bladder diverticuli

Hernias, hemorrhoids

EXAMINATION

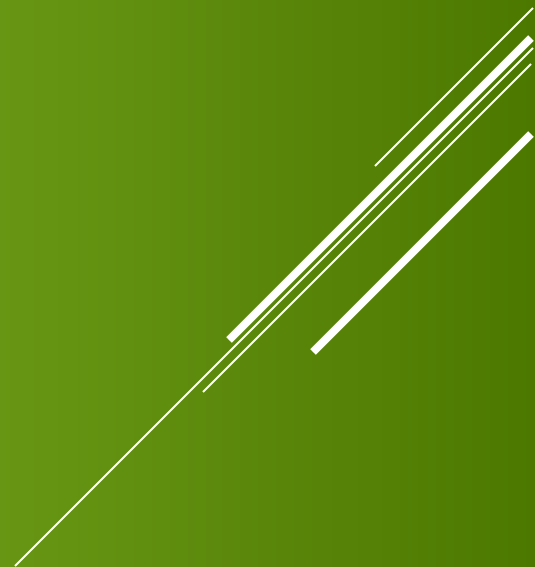
Check for full bladder

DRE- soft

- smooth
- symmetrical
- median sulcus preserved
- mucosa of rectum mobile over prostate

INVESTIGATION

- 1- CBC/urine/RFT/PSA
- 2- Ultrasound-(PVRU)
if PSA and DRE normal- BPH
- 3- Uroflowmetry
- 4- IPSS



INTERNATIONAL PROSTATE SYMPTOM SCORE (IPSS)

				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	Your score		
Incomplete emptying Over the past month, how often have you had a sensation of not emptying your bladder completely after you finish urinating?				0	1	2	3	4	5			
Frequency Over the past month, how often have you had to urinate again less than two hours after you finished urinating?				0	1	2	3	4	5			
Intermittency 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			
Urgency Over the last month, how difficult have you found it to postpone urination?				0	1	2	3	4	5			
Weak stream Over the past month, how often have you had a weak urinary stream?				0	1	2	3	4	5			
Straining Over the past month, how often have you had to push or strain to begin urination?				None	1 time	2 times	3 times	4 times	5 times or more	Your score		
Nocturia Over the past month, many times did you most typically get up to urinate from the time you went to bed until the time you got up in the morning?				0	1	2	3	4	5			
Quality of life due to urinary symptoms				Delighted	Pleased	Mostly satisfied		Mixed – about equally satisfied and dissatisfied		Mostly dissatisfied	Unhappy	Terrible
If you were to spend the rest of your life with your urinary condition the way it is now, how would you feel about that?				0	1	2		3		4	5	6

Total score: 0-7 Mildly symptomatic; 8-19 moderately symptomatic; 20-35 severely symptomatic.

BPH

DIFFERENTIAL DIAGNOSIS

- Urethral stricture
- Bladder neck contracture
- Carcinoma of the prostate
- Carcinoma of the bladder
- Bladder calculi
- Urinary tract infection and prostatitis
- Neurogenic bladder



TREATMENT OPTIONS

Watchful waiting and behavioral modification

Medical Management

- Alpha blockers

- 5-alpha reductase inhibitors

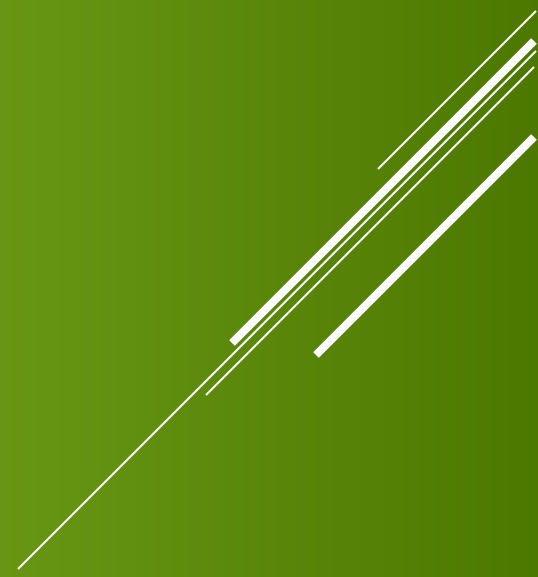
- Combination therapy

Surgical Management

- Office based therapy

- OR based therapy

Urethral stents

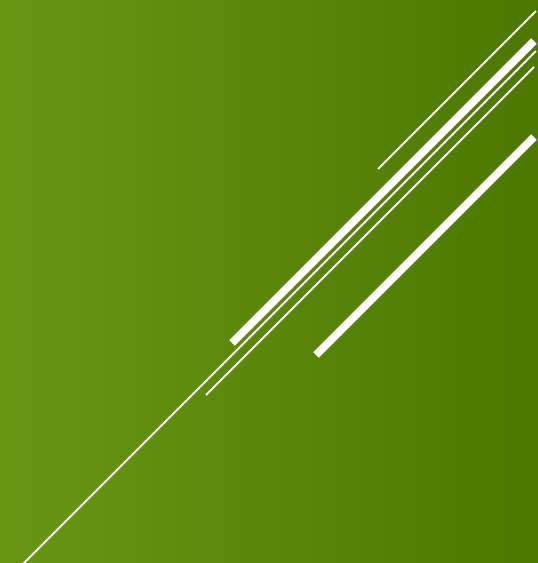


WATCHFUL WAITING AND BEHAVIORAL MODIFICATION

“ In patients with mild symptoms and minimal bother”

IPSS < 7,

1/3 improve on own.



WATCHFUL WAITING AND BEHAVIORAL MODIFICATION

Decrease caffeine, alcohol (diuretic effect).

Avoid taking large amounts of fluid over a short period of time

Void whenever the urge is present, every 2-3 hours

Maintain normal fluid intake, do not restrict fluid

Avoid bladder irritants to include dairy products, artificial sweeteners, carbonated beverages

Limit nighttime fluid consumption

MEDICAL MANAGEMENT

Herbal

Saw Palmetto

Alpha blockers

Doxazosin (Cardura), Terazosin (Hytrin),
Tamsulosin (Flomax), Alfuzosin (Uroxatral)

5-alpha reductase inhibitors

Finasteride (Proscar), Dutasteride (Avodart)

Combination therapy

Alpha blocker and 5-alpha reductase inhibitor

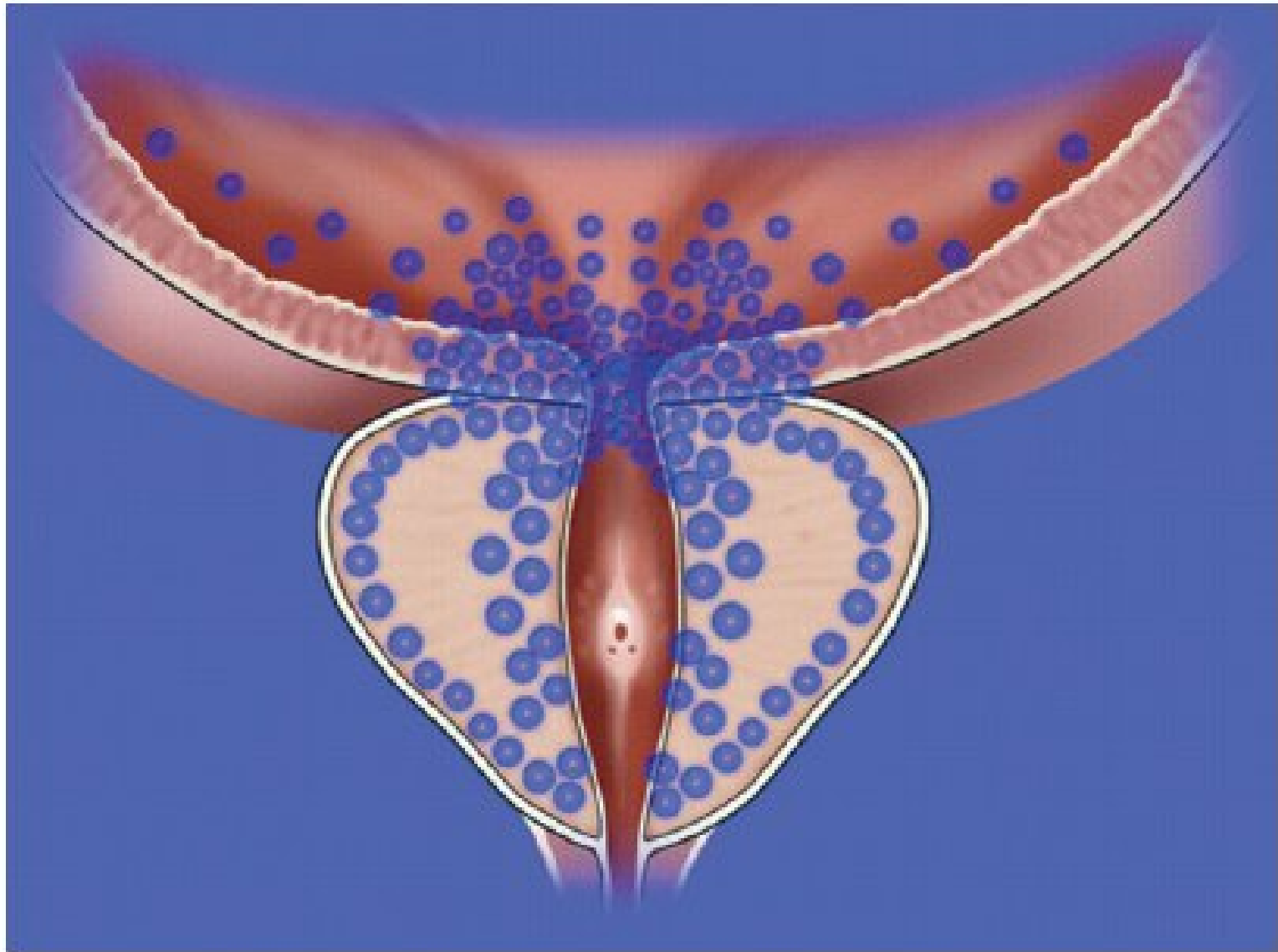
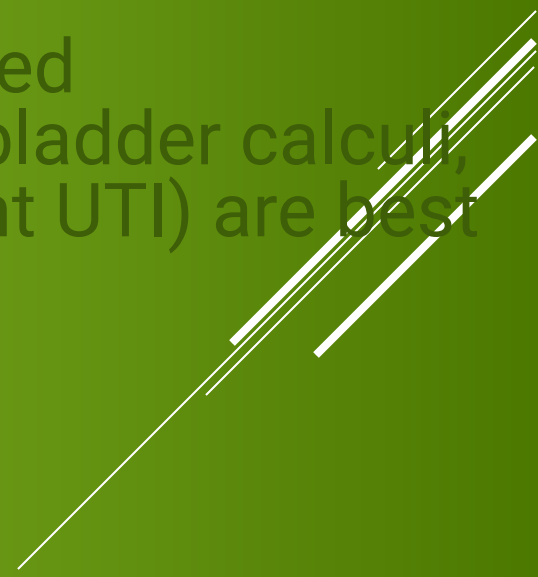


Figure 92–4. Distribution of α_1 -adrenergic receptors in the lower urinary tract.

SURGICAL MANAGEMENT

Patients may select surgical treatment as initial therapy if moderate or severe bother is present (IPSS >16).

Patients who have developed complications of BPH (i.e. bladder calculi, renal insufficiency, recurrent UTI) are best treated surgically.



SURGICAL MANAGEMENT

Minimally invasive endoscopic therapy:

Transurethral resection of the prostate (TURP)

Transurethral microwave therapy (TUMT)

Transurethral needle ablation (TUNA)

Transurethral incision of the prostate (TUIP)

Transurethral vaporization of the prostate



SURGICAL MANAGEMENT

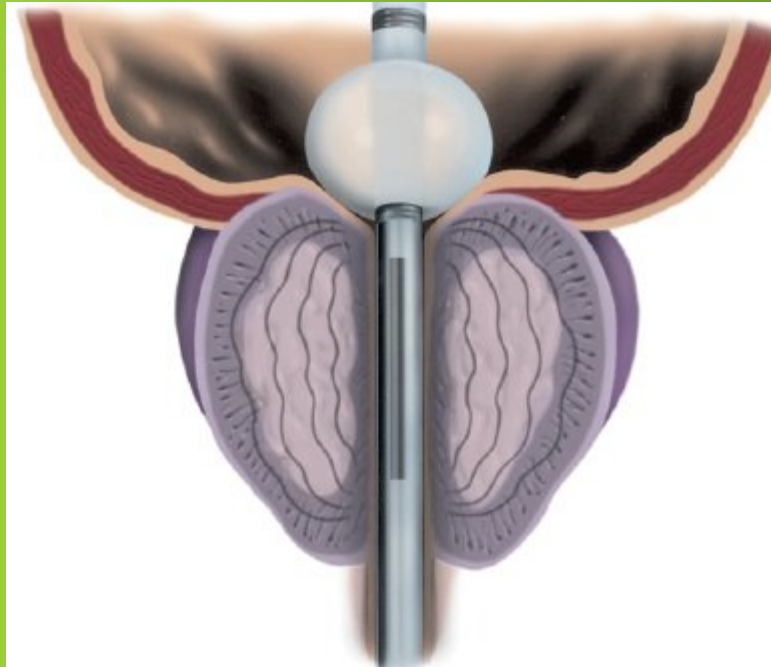
Office based therapies:

- Transurethral microwave therapy (TUMT)

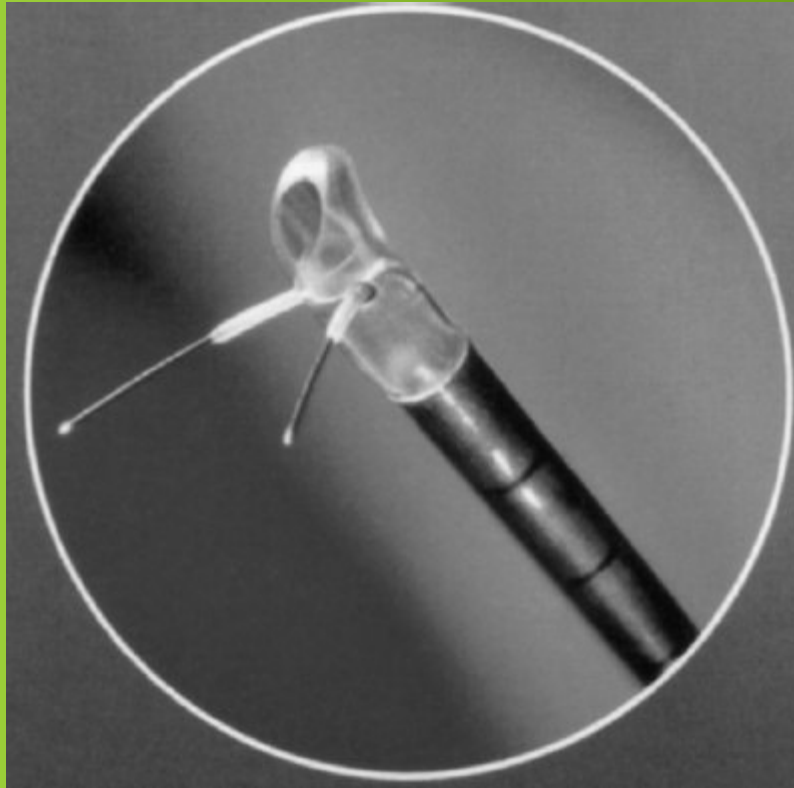
- Transurethral needle ablation (TUNA)

Significant side effects/
complications
associated with these
treatments
have prompted a FDA warning

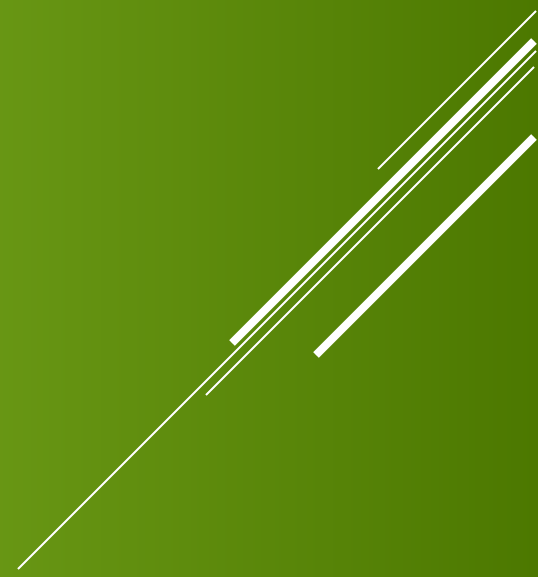




TRANSURETHRAL MICROWAVE THERAPY



TRANSURETHRAL NEEDLE ABLATION



SURGICAL MANAGEMENT

OR based therapies:

Open simple prostatectomy /
TURP (gold standard)

Transurethral incision of the prostate

Laser vaporization of the prostate (green light ,holmium laser)

BPH TREATMENT

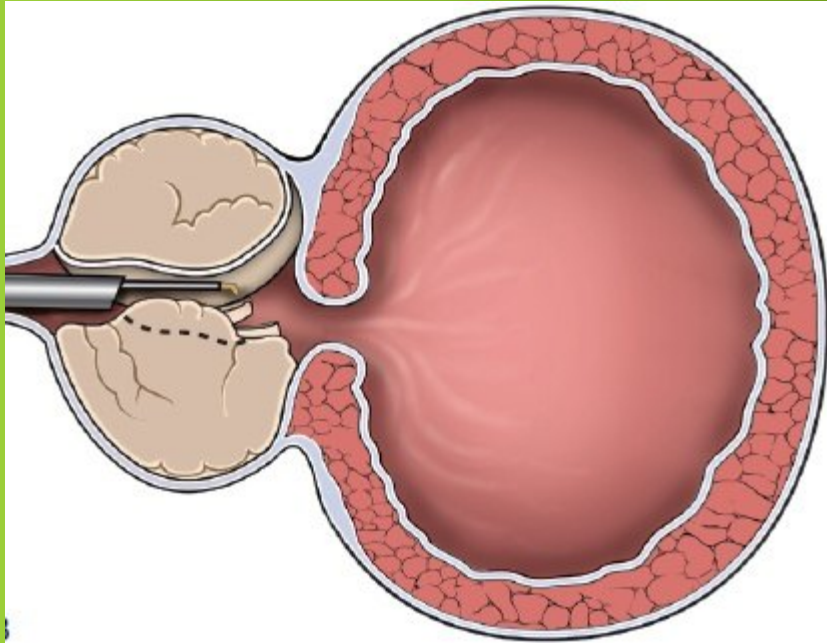
SURGICAL

Transurethral Prostatectomy(TURP):
80-90% improvment and 5% require repeat TURP.

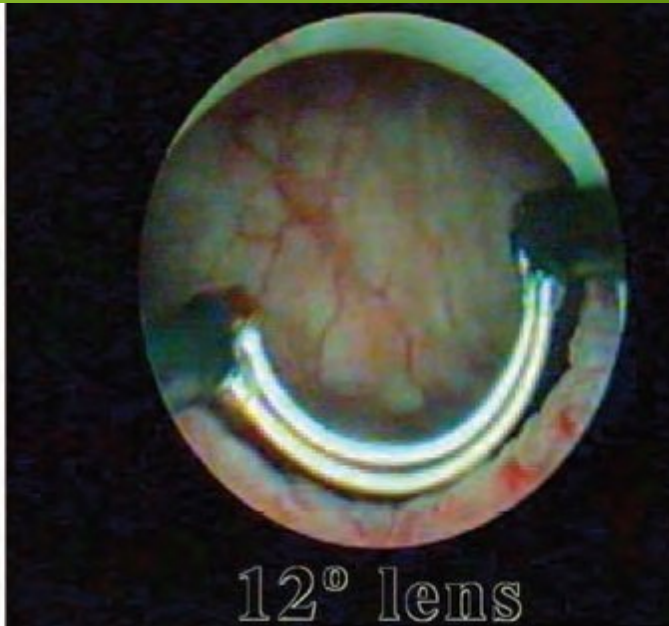
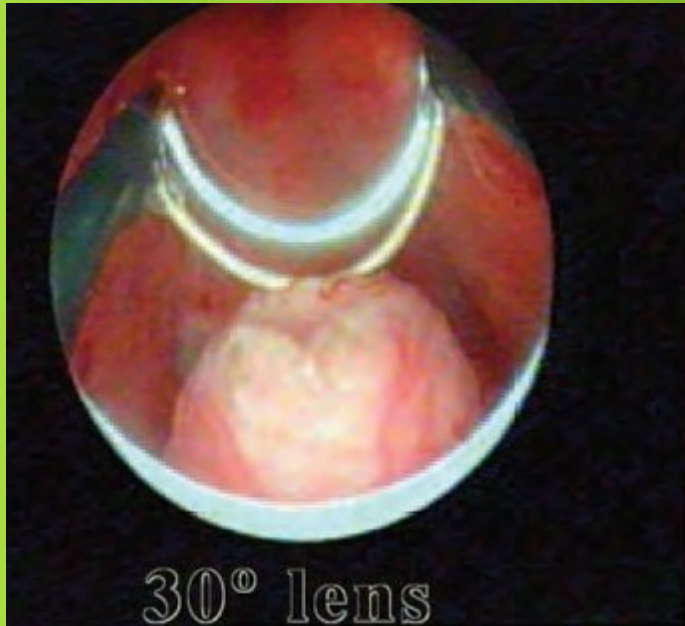
Transurethral Incision of Prostate (TUIP):
less morbidity with similar efficacy
indicated for smaller prostates.

Open Prostatectomy: indicated for glands
> 75 grams or when additional procedure
needed for suprapubic/retropubic
approaches

TURP



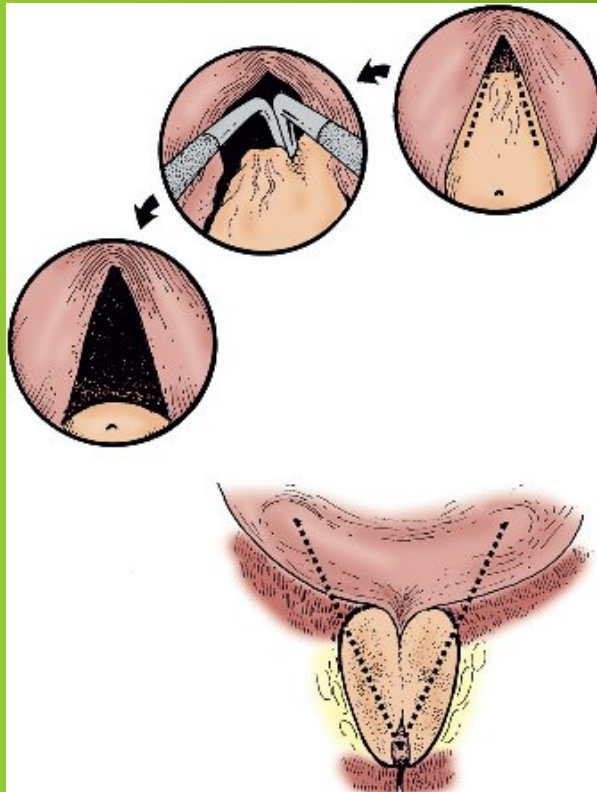
TURP



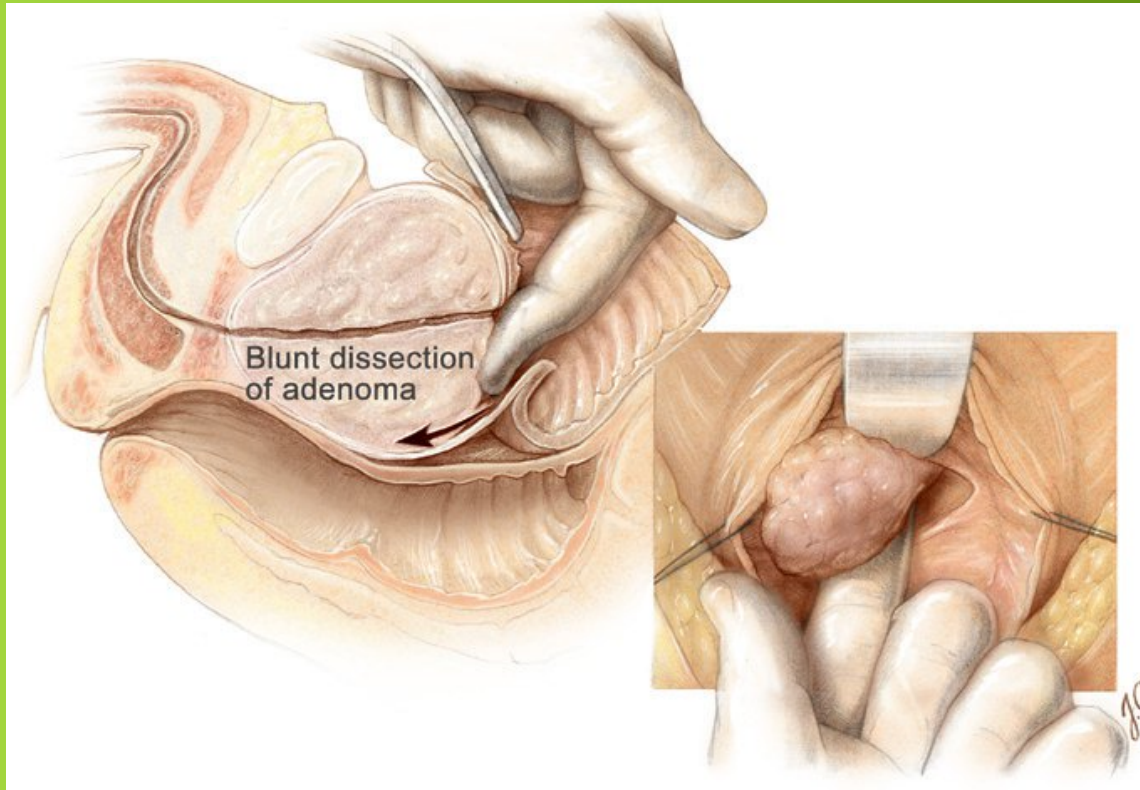
COMPLICATIONS OF TURP

- Risk of incontinence 1%
- Decline in erectile function
- 65% of retrograde ejaculation
- TUR syndrome (acute hyponatremia from free water absorption)
- Hemorrhage
- Bladder neck contracture 5 %.

TUIP



OPEN PROSTATECTOMY

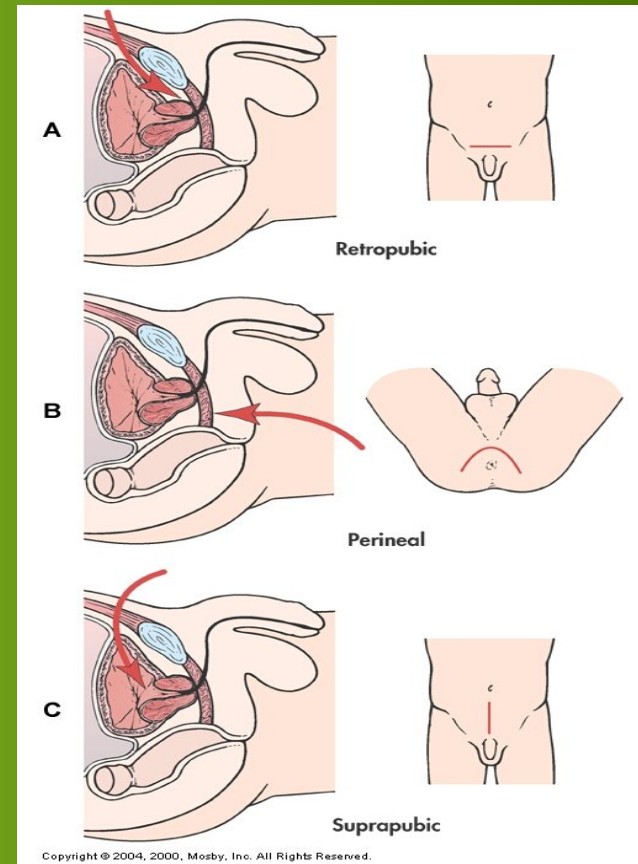


SURGICAL APPROACHES FOR PROSTATECTOMY

Retropubic

Perineal

Suprapubic



OPEN PROSTATECTOMY COMPLICATIONS

- Bleeding
- Postoperative pain
- Risk for infection
- Erectile dysfunction
- Urine incontinence
- Stricture

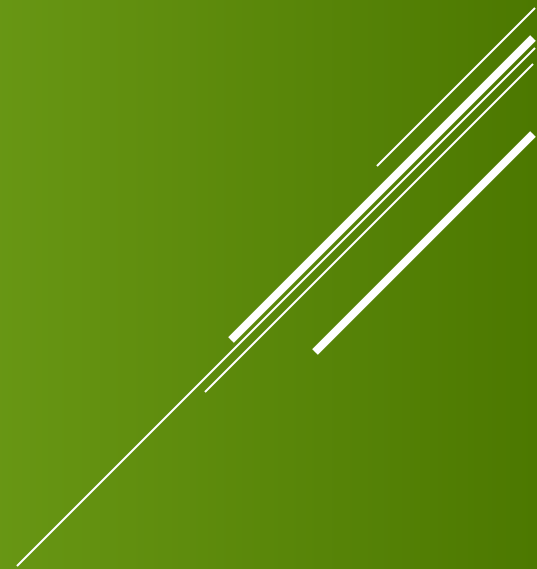
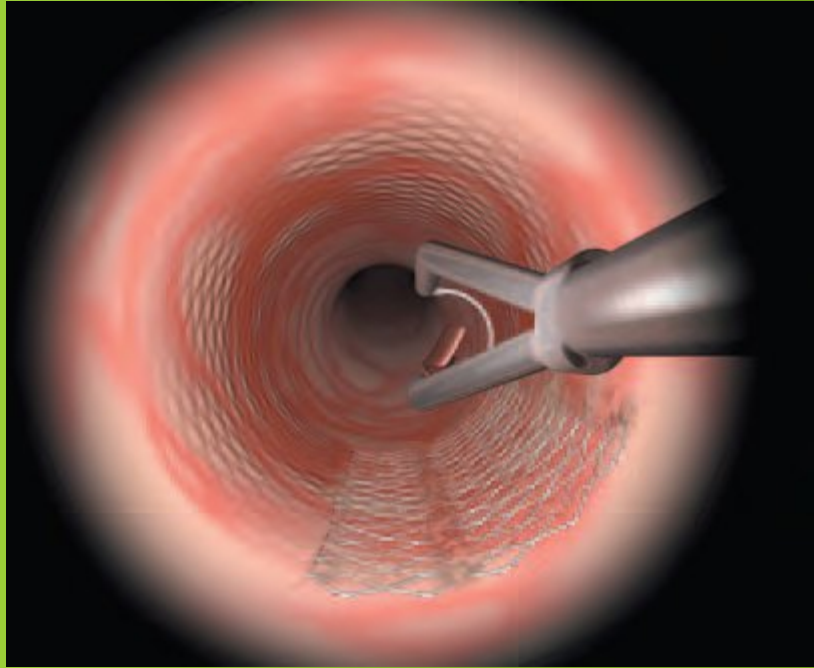
Prostatic stents

Permanent prostatic stents were introduced for prostatic obstruction, for patients unfit for prostatic surgery, but complications were relatively high.

The newer stents, are possible methods of overcoming the temporary retention that can occur secondary to treatments such as laser therapy or high-energy TUMT.



URETHRAL STENT



Good Luck

