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BENIGN PROSTATIC HYPERPLASIA (BPH)

Benign Prostate Hyperplasia

- Enlargement of the prostate gland resulting from ↑ in number of epithelial cells and stromal tissue
- Most common urologic problem in male adults
  - About 50% of all men will develop BPH in their lifetime

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BPH
Etiology & Pathophysiology

- BPH is not completely understood
- Theory: results from hormonal changes from the aging process
  - Excessive accumulation of DHT in the prostate cells can stimulate overgrowth of prostate tissue
    - Dihydroxytestosterone (DHT)
  - ↑ Age = ↓ testosterone
    - ↑ proportion of estrogen over testosterone in blood

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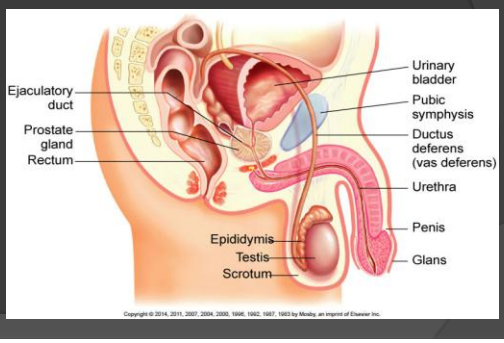
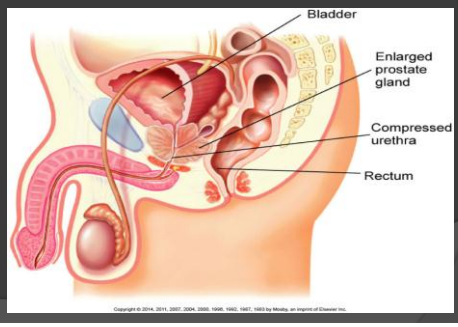
Male Reproductive System



Benign Prostatic Hyperplasia (BPH)



BPH
Etiology & Pathophysiology

- Compression of the urethra leads to:
  - ↓ Caliber & force of the urinary stream
  - Difficulty in initiating voiding
  - Intermittency of voiding
  - Dribbling

BPH
Etiology & Pathophysiology

- Risk Factors
  - Aging
  - Obesity
    - Especially ↑ waist circumference
  - Lack of physical activity

BPH
Etiology & Pathophysiology

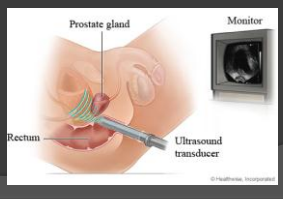
- Risk Factors (cont.)
  - Alcohol consumption
  - Erectile dysfunction (ED)
  - Smoking
  - Diabetes

BPH
Case Study

- W.B. is a 62 y/o male who presents to the clinical C/O
  - Urinary urgency, frequency & stopping/starting stream
- UA= + UTI
- Digital rectal exam (DRE) = prostate firm & smooth
- PSA is 5 ng/mL
  - *< 4 ng/mL

BPH
Case Study

- A transrectal ultrasound (TRUS) is ordered
  - Indicates enlarged prostate



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BPH
Clinical Manifestations

- Symptoms: gradual in onset
- Associated with lower urinary tract obstruction
- Early symptoms are usually minimal
  - Bladder can compensate
- Symptoms worsen as obstruction increases

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BPH
Clinical Manifestations

- Categorized into two groups
  - Obstructive symptoms
  - Irritative symptoms
- Nocturia is usually the first symptom noticed

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BPH
Clinical Manifestations

- Irritative symptoms
  - Associated with inflammation or infection
    - Urinary frequency & urgency
    - Dysuria
    - Bladder pain
    - Nocturia
    - Incontinence

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BPH
Clinical Manifestations

- Obstructive symptoms
  - Due to urinary retention
    - ↓ Caliber & force of urinary stream
    - Difficulty in initiating urination
    - Intermittency
      - Starting & stopping stream several times while voiding
    - Dribbling at end of urination

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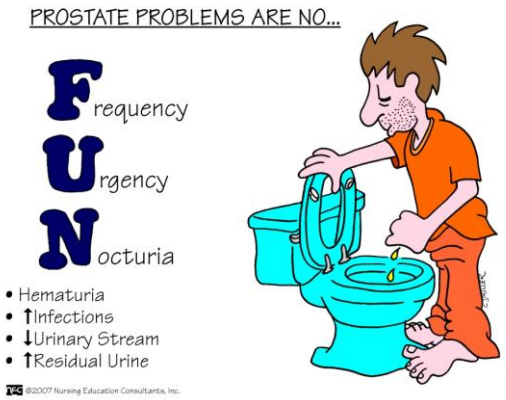

BPH Complications

- Obstructive complications
  - Relatively uncommon in BPH
    - Acute urinary retention
      - Sudden, painful inability to urinate
      - Treatment: catheter insertion
      - Possibly surgery

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BPH Complications

- UTI
- Sepsis
  - Incomplete bladder emptying with residual urine provides medium for bacterial growth

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BPH Complications

- Calculi may develop in bladder because of alkalinization of residual urine
- Renal failure
  - Caused by hydronephrosis
- Pyelonephritis

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BPH
Diagnostic Studies

- History & PE
- Digital rectal exam (DRE)
- UA with culture
- PSA level
- Serum creatinine

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BPH
Diagnostic Studies

- TRUS scan
- Uroflometry
  - Uroflow test (speed & amount)
- Cystoscopy
  - Visualize the bladder/ urethra

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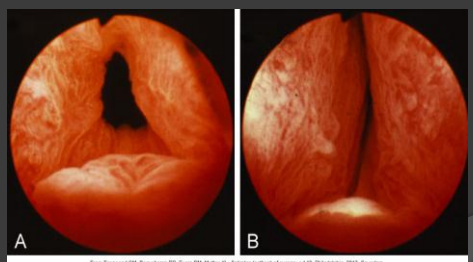
BPH



From Townsend CM, Beauchamp RD, Evers BM, Mattox KL. Sabiston textbook of surgery: ed 19. Philadelphia, 2012. Saunders.

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BPH
Collaborative Care

- Goals
  - Restore bladder drainage
  - Relieve symptoms
  - Prevent & treat complications

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BPH
Collaborative Care

- Conservative Management
  - Active surveillance
    - Mild symptoms or asymptomatic
  - Symptoms may disappear
  - Lifestyle changes may result in improvement
    - ↓ Caffeine, time voiding schedule (ex: q2-3 hours)

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BPH: Medication
Collaborative Care

- Offers symptomatic relief of BPH
  - 5α reductase inhibitors
    - Proscar, Avodart, Jalyn
      - ↓ Size of prostate gland
      - Takes 3-6 months for improvement
      - Side effects: ↓ libido, erectile dysfunction (ED) & ↓ ejaculation volume

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BPH: Medication
Collaborative Care

- α Adrenergic receptor blockers
  - Flomax, Cardura, Rapaflo
  - Promote smooth muscle relaxation in prostate
  - Facilitates urinary flow
    - Improvement seen in 2-3 weeks
  - *Offers symptomatic relief but does not treat hyperplasia

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BPH
Collaborative Care

- Medication Therapy
  - Erectogenic drugs
    - Tadalifil (Cialis) effectively reduces symptoms of both BPH & ED
  - Herbal Therapy
    - *Ask patients about any over the counter medication or herbal therapy
      - Drug to drug interactions
        - Nitrates

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BPH
Collaborative Care

- Minimally invasive therapies
  - Variety of laser therapies
- Invasive (surgical) therapies
- Table: 55-3 pg. 1311
  - Variety of procedures

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BPH
Collaborative Care

- Minimally invasive therapies
  - Becoming more common
    - Destroy prostatic tissue
      - Lasers
      - Radiowaves
      - Ultrasound
      - Microwaves
      - Electrical current

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BPH
Collaborative Care

- Minimally invasive
  - Transurethral Microwave Therapy (TUMT)
    - Outpatient procedure
    - Delivers microwaves directly to prostate through a urethral probe
    - Heat causes death of tissue & relief of obstruction
  - Not appropriate if rectal problems exist

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BPH
Collaborative Care

- TUMT post operative issues
  - #1 Urinary retention
  - Bladder spasms
  - Hematuria/ dysuria

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BPH
Collaborative Care

- TUMT: Post Op Care
  - Patient sent home with urinary catheter
    - 2-7 days (clots of dead tissue)
  - Antibiotics
  - Pain medications
  - Antispasmodic bladder medications

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BPH
Collaborative Care

- Transurethral Needle Ablation (TUNA)
  - ↑ Temperature of prostate tissue for localized necrosis
  - Low-wave frequency used
  - Only tissue in contact with needle affected
    - Precise

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BPH
Collaborative Care

- Transurethral Needle Ablation (TUNA)
  - Majority of patients show improvement of symptoms
  - Outpatient procedure
    - Local anesthesia & sedation
    - Approx: 30 minutes
    - Little pain
    - Quick recovery

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BPH
Collaborative Care

- Transurethral Needle Ablation (TUNA)
  - Complications:
    - Urinary retention
    - UTI
    - Dysuria
    - Hematuria up to 1 week
  - Some patients are d/c'd with a urinary catheter

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BPH
Collaborative Care

- Minimally Invasive Therapy
  - Laser Prostatectomy
    - Laser beam transurethrally to cut or destroy parts of the prostate
  - Variety of laser procedures

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BPH
Collaborative Care

- Minimally Invasive Therapy
  - Visual laser ablation of the prostate (VLAP)
    - Common procedure
      - Minimal bleeding during & after procedure (fast recovery)
    - Laser bean produces deep necrosis and prostate tissue gradually sloughs in urine
    - Takes several weeks to reach results
    - Urinary catheter is inserted

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BPH
Collaborative Care

- Intraprostatic urethral stents
  - Poor surgical candidates
  - Stents placed into prostatic tissue
  - Potential complications
    - Chronic pain
    - Infection
    - Encrustations
  - Long term effects: not known

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BPH
Collaborative Care

- Surgery (Invasive Therapy)
  - Indicated:
    - Persistent residual urine
    - Acute urinary retention
    - Hydronephrosis

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BPH
Collaborative Care: Invasive Therapy

- Transurethral Resection (TURP)
  - Removal of obstructing prostate tissue
  - 80-90% effective
  - Relatively low risk
  - Requires hospital stay
    - General or spinal anesthesia

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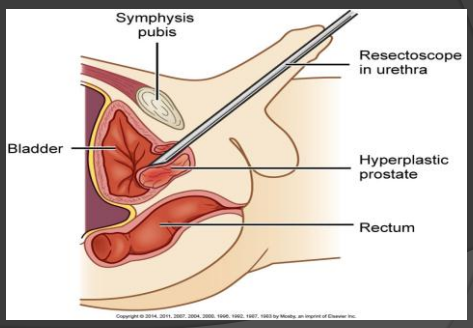
TURP



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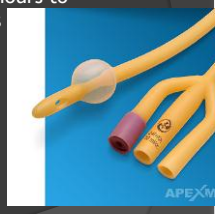
BPH
Collaborative Care: Invasive Therapy

- Transurethral Resection (TURP)
  - Bladder irrigated for first 24 hours to prevent mucous & blood clots
  - Complications
    - Bleeding, clot retention
    - Dilutional hyponatremia
    - Retrograde ejaculation



- *Stop anticoagulants prior to surgery

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TURP
(Transurethral Resection of the Prostate)

- Continuous or Intermittent Bladder Irrigation (C.B.I.) Murphy Drip
  - Close observation of drainage system- (↑ Bladder Distention causes Pain & Bleeding).
- Maintain Catheter Patency
- Bladder Spasms
- Pain Control: Analgesics & ↓ Activity first 24 hours.
- Avoid straining with BM's. ↑ Fiber diet & Laxatives.
- Complications:
  - Hemorrhage - Bleeding should gradually ↓ to light pink in 24 hrs.
  - Urinary Incontinence - Kegal Exercises
  - Infections - ↑ Fluids
  - Prevent Deep Vein Thrombosis
    - Sequential compression stockings
    - Low dose heparin
    - Discourage sitting for prolonged periods

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U-tube

- Bladder irrigation

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BPH
Collaborative Care: Invasive Therapy

- Transurethral incision of the prostate (TUIP)
  - Moderate to severe symptoms
  - Local anesthesia
    - Several small incisions made into prostate to expand the urethra
      - Improves urine flow
  - *Clients with small or moderately enlarged prostate gland

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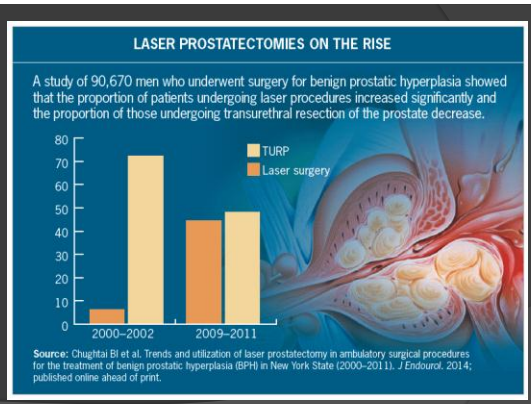

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BPH
Nursing Assessment

- Urinary issues
  - As previously discussed
    - Urinary urgency, ↓ in caliber & force of urinary stream, hesitancy in initiating voiding, post void dribbling

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BPH
Nursing Assessment

- Distended bladder upon palpation
  - Residual urine
- Enlargement of prostate
  - Rectal examination, Ultrasound
- Urinalysis
- Creatinine levels

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BPH
Nursing Diagnosis

- Acute pain
- Risk for infection
- Urge urinary incontinence
- Urinary retention

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BPH
Planning

- Goals for client's having invasive procedures
  - Restoration of urinary drainage
  - Tx of UTI
  - Knowledge
    - Upcoming procedures
    - Urinary control
    - Implications for sexual functioning (ED)

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BPH
Nursing Implementation Health Promotion

- Focus: early detection & treatment
  - Yearly physical exams and DRE for men over 50
  - Teaching:
    - Alcohol, caffeine, cold & cough meds can ↑ symptoms
      - Diuretic effect
      - Cold meds: constriction of smooth muscles

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BPH
Nursing Implementation Health Promotion

- Teaching
  - Clients with obstructive symptoms need to urinate every 2-3 hours when feeling urge
    - Minimize urinary stasis & acute urinary retention
  - Adequate fluid intake
    - Restricting fluids ↑ chance of infection

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BPH
Nursing Implementation

- Preoperative care for TURP
  - Restore urinary drainage
    - Coude- curved-tip catheter
    - Filiform- rigid catheter
  - Teach: Aseptic technique
  - Treat UTI's - Abx
  - Discuss possible complication of procedure
  - Allow client to express concerns

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BPH
Nursing Implementation

- Postoperative Care for TURP
  - Assess for complications
    - Hemorrhage
    - Bladder spasms
    - Urinary incontinence
      - May last several weeks
    - Infection

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BPH
Nursing Implementation

- Postoperative Care for TURP
  - Bladder irrigation
    - Remove blood clots & ensure UOP
  - Administer antispasmotics
  - Teach kegel exercises

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BPH
Nursing Implementation

- Postoperative Care for TURP
  - Observe client for S/S of infection
  - Stool softeners
    - Prevent straining

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THE END

- QUESTIONS?

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PROSTATE CANCER

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Prostate Cancer Statistics

- 1 in every 6 men will develop it in their lifetime
- Most common cancer among men
  - Excluding skin cancer
- Second leading cause of cancer death in men

58

Prostate Cancer Etiology & Pathophysiology

- Androgen-dependent adenocarcinoma
  - Majority of tumors occur in outer aspect of prostate gland
  - Usually slow growing
  - Most common site for metastasis is bone

59

Prostate Cancer Etiology & Pathophysiology

- Spreads by three routes
  - Direct extension
    - Involves seminal vesicles
    - Urethral mucosa
    - Bladder wall
    - External sphincter

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Prostate Cancer Etiology & Pathophysiology

- Spreads by three routes
  - Lymph system
    - Regional lymph nodes
  - Bloodstream
    - To pelvic bones/ femur/ lower lumbar spine/ liver/ lungs

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Prostate Cancer Etiology & Pathophysiology

- Risk Factors
  - Non-modifiable risk factors
    - Age, ethnicity, family history
  - Incidence ↑ after age 50
  - Median age at diagnosis is 67 years old
  - Highest in Jamaican men of African decent
  - 1st degree relative with prostate cancer (Genetic)

62

Prostate Cancer Etiology & Pathophysiology

- No single gene is the cause
  - No genetic test available (yet)
- Classified into 3 categories
  - Sporadic
  - Familial
  - Hereditary

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Prostate Cancer Etiology & Pathophysiology

- Sporadic prostate cancer
  - Damage to the gene occurs after the person is born
  - Accounts for 75% of prostate cancers

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Prostate Cancer Etiology & Pathophysiology

- Familial prostate cancer
  - Combination
    - Shared genes
    - Shared environmental or lifestyle factors
  - Accounts for approximately 20% of prostate cancer

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Prostate Cancer Etiology & Pathophysiology

- Hereditary prostate cancer
  - Occurs when gene mutations are passed down through generations

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Prostate Cancer Etiology & Pathophysiology

- Family has any of the following:
  - 3 or more 1st degree relatives with prostate cancer
  - 3 generations on the same side of the family
  - 2 or more close relatives (on the same side of the family) are diagnosed before the age of 55
    - Father, brother, son, grandfather, uncle, nephew
- Rare: approximately 5-10% of prostate cancer

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Prostate Cancer Etiology & Pathophysiology

- Hereditary breast & ovarian cancer syndrome (HBOC)
  - Associated with BRCA1 & BRCA2 gene mutations
    - ↑ Risk of breast cancer and prostate cancer
    - Cause a small percentage of familial prostate cancers

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Prostate Cancer Clinical Manifestations

- Usually asymptomatic in early stages
- Eventually may experience symptoms
  - Dysuria
  - Hesitancy
  - Dribbling
  - Frequency

69

Prostate Cancer Clinical Manifestations

- Symptoms similar to BPH
  - Urgency
  - Hematuria
  - Nocturia
  - Retention
  - Interruption of urinary stream
  - Inability to urinate

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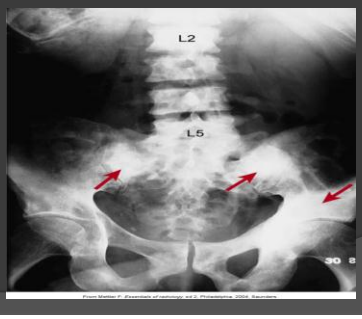
Prostate Cancer Mets to Pelvis & Lumbar Spine



From Mettler F: Essentials of radiology, ed 2, Philadelphia, 2004, Saunders.

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Prostate Cancer Diagnostic Studies

- Primary screening tools
  - PSA
    - Prostate-specific antigen blood test
    - Elevated levels indicate prostatic pathology
      - No necessarily cancer
  - DRE
    - Digital rectal examination
      - Abnormal prostate findings
        - Hard, nodular, asymmetric

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Prostate Cancer
Diagnostic Studies

- Biopsy
  - Necessary to confirm diagnosis
  - Done using TRUS
    - Allows visualization and pinpoint abnormalities

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Prostate Cancer
Diagnostic Studies

- PAP (Prostatic Acid Phosphatase)
  - ↑ Levels indicate prostate cancer
- Bone scan, CT, MRI & TRUS to determine location & spread

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Prostate Cancer
Case Study

- 70 year old G.H. presents to clinic with urinary urgency, difficulty initiating stream and retention
- Symptoms began 6 months ago
- Last PSA & DRE
  - 10 years ago
  - "Normal" results

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Prostate Cancer
Case Study

- You are taking a health history from G.H.
- What risk factors & symptoms do you want to know about?

76

Prostate Cancer:
Medication
Collaborative Care

- Current research
  - "Chemoprevention of prostate cancer"
  - Finasteride (Proscar) & other drugs to treat BPH
    - May reduce chance of getting prostate cancer by 25%
      - Can increase risk of developing aggressive prostate cancer
        - Continued research needed

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Prostate Cancer
Collaborative Care

- Early recognition & treatment
  - Control tumor growth
  - Prevent metastasis
  - Preserve quality of life
    - 90% diagnosed local or regional stage
      - 5 year survival rate is 100% at this stage

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Prostate Cancer
Collaborative Care

- Common Classification system
  - Tumor, node & metastasis (TNM) system
    - Used to determine extent of prostate cancer

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Prostate Cancer
Collaborative Care

- Gleason Scale
  - Grading of tumor
- 1 (well-differentiated) to 5 (undifferentiated)
- Grades are given to the 2 most common patterns of cells and added together
- Gleason score ranges from 2-20

80

Prostate Cancer
Collaborative Care

- Active Surveillance
  - Watchful waiting
    - Life expectancy is less than 10 years
    - Presence of low-grade, low stage tumor
    - Serious coexisting medical conditions

81

Prostate Cancer
Collaborative Care

- Surgical Therapy
  - Radical prostatectomy
    - Entire gland, seminal vesicles, and part of bladder neck are removed
    - Lymph node dissection
      - Usually done
  - *Considered most effective for long-term survival

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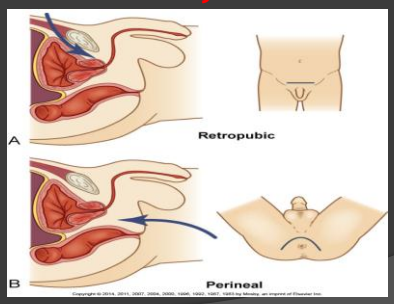
Prostate Cancer
Prostatectomy



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Prostate Cancer
Collaborative Care

- Radical prostatectomy
  - Hospital stay 1-3 days
  - Catheterized 1-2 days

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Prostate Cancer
Collaborative Care

- Radical prostatectomy
  - Major complications
    - Hemorrhage
    - Urinary retention
    - Infection

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Prostate Cancer
Collaborative Care

- Radical prostatectomy
  - Major complications (cont.)
    - DVT/PE
    - Wound dehiscence/ infection
    - ED
    - Incontinence

86

Prostate Cancer
Collaborative Care

- Nerve-sparing surgical procedure
  - Spares nerves responsible for erection
  - Only for cancer confined to prostate
  - Not guaranteed

87

Prostate Cancer
Collaborative Care

- Cryosurgey (cryoablation)
  - Surgical technique
    - Destroys cancer cells by freezing the tissue
  - Initial and 2nd line treatment
    - After radiation therapy has failed

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Prostate Cancer
Collaborative Care

- Cryosurgery Complications
  - Hemorrhage
  - Damage to urethra
  - Fistula (Urethrorectal)
  - Tissue sloughing
  - Incontinence
  - Prostatitis
  - ED

89

Prostate Cancer
Collaborative Care

- Radiation Therapy
  - External beam radiation
    - Most widely used method
    - Treats cancer confined to prostate & surrounding tissue

90

Prostate Cancer
Collaborative Care

- Radiation Therapy: Brachytherapy
  - Implantation of radioactive seed into prostate gland
  - Spares surrounding tissue
  - Placement guided by transrectal ultrasound

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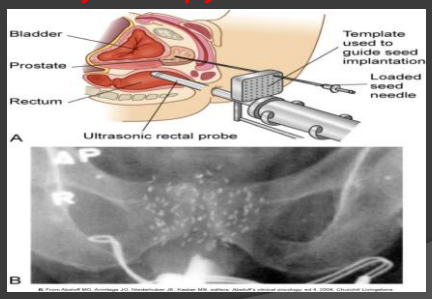
Prostate Cancer
Brachytherapy



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Prostate Cancer
Collaborative Care

- Brachytherapy
  - Best: Early stages
  - Common side effects
    - Urinary irritation or obstruction
    - ED
  - *May be offered in combination with external beam radiation treatment for advanced tumors

93

Prostate Cancer
Case Study

- Current DRE
  - Prostate hard and nodular
- PSA = 12 ng/mL
  - Normal: PSA 0- <4ng/mL
- Biopsy: cancer
- G.H. decides to undergo radical prostatectomy

94

Prostate Cancer
Collaborative Care

- Drug Therapy
  - Androgen deprivation is primary therapeutic approach
    - Focus:
      - ↓ Androgen levels to reduce tumor growth
        - Can be done before surgery or radiation

95

Prostate Cancer
Collaborative Care

- Androgen deprivation therapy
  - "Hormone refractory"
    - Tumors resistant to therapy within a few years
    - ↑ PSA levels - 1st sign

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Prostate Cancer
Collaborative Care

- Androgen deprivation therapy
  - Two classes
    - Androgen synthesis inhibitors
    - Androgen receptor blockers

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Prostate Cancer
Collaborative Care

- Androgen synthesis inhibitors
  - ↓ Luteinizing hormone & testosterone level
  - Produce: "Chemical castration"
  - Side effects
    - Hot flashes, gynecomastia, loss of libido, ED

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Prostate Cancer
Collaborative Care

- Androgen releasing hormone antagonist (Degarelix)
  - Blocks LH receptors
  - Immediate testosterone suppression
  - Side effects
    - Injection site: redness, pain, swelling
    - ↑ Liver enzymes

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Prostate Cancer
Collaborative Care

- Chemotherapy
  - Goal is mainly palliative
  - Limited to treatment: Hormone resistant prostate cancer (HRPC)
    - Late stages
      - Prostate cancer is continuing to progress in spite of treatment

100

Prostate Cancer
Nursing Assessment

- Health history
  - Urinary pattern, LBP radiating to legs/pelvis or bone pain
- Family history
- Lifestyle
  - High fat diet, weight loss

101

Prostate Cancer
Nursing Diagnosis

- Acute pain
- Urinary retention
- Impaired urinary elimination
- Anxiety
- Sexual dysfunction

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THE END

- QUESTIONS?

- Testicular Cancer

Testicular Cancer: Statistics

- Rare
- <1% of all male cancers
- Common age: 15-35 years old
- One of the most curable cancers

Testicular Cancer
Clinical Manifestations

- Signs & Symptoms
  - Painless lump in scrotum
  - Swelling
  - "Heavy feeling"
  - Dull ache in lower abdomen

Testicular Cancer
Diagnostics

- #1 Palpation of scrotum
  - Firm & does not transilluminate
- Ultrasound
- Blood
  - AFP, LDH, hCG
    - A-fetoprotein, Lactate dehydrongenase, human chorionic gonadotropin

Testicular Cancer
Diagnostics

- Metastatic tests
  - Chest X Ray
  - CT scan
    - Abd/pelvis

Testicular Cancer
Collaborative Care

- Radical Orchietomy
  - Removal of:
    - Affected testis
    - Spermatic cord
    - Regional lymph nodes

Testicular Cancer
Collaborative Care

- Postorchiectomy treatment
- Depending on stage
  - Surveillance
  - Radiation therapy
  - Chemotherapy (advanced stage)

Testicular Cancer
Health Promotion

- Teaching
  - Monthly testicular self exams
    - Starting at puberty
- Guidelines
  - Table 55-9

Testicular Cancer
Prognosis

- If detected early: 95% of patients have complete remission
- Some chemo meds cause long term side effects
  - Pulmonary toxicity
  - Kidney damage
  - Nerve damage

The End

- Questions?