Male Reproductive System
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Male Reproductive System Outline

- Testis
- Prostate
Testicular Cancer

- Peak incidence: 15-35
- Firm, painless enlargement of the testis
- Some present with metastases
- Treatable – curable! – if detected early
Testicular Cancer Classification

• Seminoma

• Non-seminoma
  • Embryonal carcinoma
  • Yolk sac tumor
  • Choriocarcinoma
  • Teratoma
Seminoma

- Half of all testicular cancers
- Arise from germinal epithelium of seminiferous tubules
- “Spermatocytic” variant occurs in older patients; better prognosis
Seminoma
Nonseminomas

- Embryonal tumor (undifferentiated stem cells)
- Yolk sac tumor (yolk sac cells)
- Choriocarcinoma (immature placental cells)
- Teratoma (somatic tissue cells)
Teratoma
Tumor markers

• Used mostly for following patients over time

• Human chorionic gonadotropin (hCG)
  • Normally made by placental cells
  • ↑ in choriocarcinoma

• Alpha-fetoprotein (AFP)
  • Normally made by fetal yolk sac cells
  • ↑ in yolk sac and embryonal tumors
Treatment of Testicular Cancer

- Overall, prognosis is good
  - If detected early, 90% cure rate
  - 8000 new cases a year, only 400 deaths.

- Seminomas
  - Often remain localized until large
  - Metastasize locally first, then later, distantly
  - VERY sensitive to radiation and chemotherapy

- Nonseminomas
  - Metastasize earlier, farther
  - Worse prognosis
Male Reproductive System Outline

- Testis
- Prostate
  - Benign hyperplasia
  - Carcinoma
Benign Prostatic Hyperplasia

- Very common! Present in 20% of 40 year-olds, 90% of 80 year-olds
- Usually arises in transitional zone (around urethra)
- Half of cases have signs/symptoms:
  - Enlarged prostate
  - Urinary obstruction (hesitancy, nocturia, etc.)
- Probably due to excessive androgen stimulation
Benign hyperplasia
Benign hyperplasia
Prostate Cancer

• Most common cancer in men; causes as many deaths as colon cancer
• Peak incidence: age 65-75
• Cause: androgens + genetics + environment
• Early disease: no symptoms, but palpable nodule
• Later: local pain/obstruction
Top 10 Cancers in US

New cases

Deaths

WOMEN

MEN

Lung

Colon

Breast

Pancreas

Prostate

Leukemia

Lymphoma

Liver

Ovary

Esophagus

Don’t memorize!

But do check out the difference between incidence and mortality.
Morphology of Prostate Cancer

- Most develop in peripheral zones of prostate
- Most prostate cancers are adenocarcinomas
- Better differentiated = better prognosis
Prostatic carcinoma
Prostatic carcinoma
Prostate-Specific Antigen (PSA)

- Enzyme made by prostatic epithelial cells
- PSA < 4 is normal; PSA > 10 suggests cancer
- But PSA can go up in benign disorders too
- Questionable usefulness as screening test
Prognosis of Prostate Cancer

- Treatment: surgery, radiation, hormonal therapy
- Overall 5 year survival = 98%
- Long-term survival depends on stage