Testicular Cancers

Eyre, Robert. “Evaluation of scrotal pathology.” *UpToDate v11.2*
Gilligan, Timothy. “Extragonal germ cell tumors.” *UpToDate v11.2*
Steele et al. “Clinical manifestations, diagnosis, and staging of testicular cancer.” *UpToDate v11.2*
Oh. “Posttreatment follow-up for men with testicular cancer.” *UpToDate v11.2*

**Key Points:**
- Testicular cancer diagnosis, treatment, and prognosis depends on histology (seminoma vs. NSGCT)
- Complaints of testicular masses, gynecomastia, or metastatic symptoms should often be evaluated with GU exam and ultrasound
- Prognosis is generally good, depending on site of primary, metastatic disease, and tumor markers
- Follow-up involves intensive surveillance within first 2-5 years

**Epidemiology**
- Most common solid malignancy 15-35, 1% of all male cancers
- Germ cell tumors (GCTs) 95% of testicular cancers:
  - Pure seminoma: classic, atypical, spermatocytic
  - Nonseminomatous (NSGCTs): embryonal carcinoma, teratoma (mature/immature/malignant transformation), choriocarcinoma, yolk sac tumor, mixed germ cell tumor
- Non GCTs: sex cord-stromal tumors, mixed, paratesticular, lymphoma, carcinoid, metastases
- Five-year survival > 90% testicular GCTs and >95% seminomas

**Clinical presentation**
- Nodule or painless swelling incidentally noticed
- 30-40% dull ache or heavy sensation, 10% acute pain
- 10% metastatic symptoms: neck mass, cough/dyspnea, GI sxs, LBP, bone pain, CNS, LE edema
- 5% gynecomastia (associated w/hCG, but not reliable indicator of type of tumor)
- Hyperthyroidism (hCG)
- Paraneoplastic limbic encephalitis (anti-Ma2)

**Testicular exam**
- Ovoid, firm, within tunica albuginea, possible spread to epididymis or cord, associated hydrocele
- Lymphadenopathy, gynecomastia, neuro exam
- Other conditions on GU exam:
  - Torsion: tender, bell-clapper (transverse orientation), absent cremasteric reflex, Prehn’s sign, no flow Doppler
  - Torsion of appendix: anterosuperior of testis, blue dot sign
  - Epididymitis / epididymo-orchitis: tender, swollen, risk factors, negative U/A
  - Hydrocele: diffuse swelling, transilluminates (may be reactive to neoplasm or inflammation), disappear in recumbency
  - Varicocele: unilateral left, bag of worms, relieved by recumbency, increased with Valsalva, associated testicular atrophy (right is suspicious)
  - Spermatocoele: caput of epididymis, superior to testis and distinct
  - Cysts: caput of epididymis, superior to testis and distinct
  - Trauma: hematocoele, rupture
  - STDs
  - Miscellaneous: post-vasectomy (firm epididymis), HSP idiopathic, referred

**Diagnosis**
- Ultrasound: sensitivity to 1-2mm, not reliable for determining histologic type
  - Seminomas solid
  - NSGCTs inhomogenous with calcifications, cystic areas, poor margins
- Abdominal/pelvic CT for RP lymphadenopathy (>10mm cut off), +/- lymphangiography
- CXR and chest CT for mets
NR Aug-03

- Tumor markers:
  - B hCG: <20% seminomas; 80-85% NSGCTs; >10,000ng/mL only with GCTs, trophoblastic differentiation of lung or gastric cancer, or gestational trophoblastic disease (women)
  - AFP: >10,000ng/mL only with GCTs and HCC
  - LDH
- Radical inguinal orchiectomy (poor outcome with biopsy)
- Retroperitoneal lymph node dissection

Prognosis:
- Seminoma
  - Good: any primary site, no visceral mets except lung, normal AFP, B hCG, LDH
  - Intermediate: Testicular or RP primary, nonpulmonary visceral mets, normal markers
  - Poor: mediastinal primary site, nonpulmonary visceral mets, AFP>10,000, B hCG >50,000, LDH >10X upper normal
- NSCGT
  - Good: testicular or RP primary, no visceral mets except lung, AFP<1000, B hCG <5000, LDH <1.5X upper normal
  - Intermediate: testicular or RP primary, nonpulmonary visceral mets, intermediate lab values
- Both - Poor: mediastinal primary site, nonpulmonary visceral mets, AFP>10,000, B hCG >50,000, LDH >10X upper normal
- 5 year survival: 91% good, 79% intermediate, 48% poor prognosis

Extragonal GCTs
- Midline: anterior mediastinum, RP, pineal / suprasellar regions
- Residual masses: often necrosis or desmoplastic, may be large without definite correlation to risk of malignancy – surveillance vs. excision (biopsy not reliable) depends on prior histology
- RP tumors: 62% five year survival

Management:
- Cryopreservation of sperm
- Surgery
- Chemotherapy
- XRT
- Follow up:
  - Relapse mostly within 2 years for seminomas, longer for NSGCTs
  - GU exam
  - Tumor markers for NSGCTs and some seminomas
  - Periodic CXR within first 5 years and then annually
  - CT abdomen/pelvis intensively within first 2 years