Scrotal Masses
Disclaimer:

- This is a lot of information to cover and we are unlikely to cover it all today
- These slides are to be utilized for your reference to guide your self study
MCC Objectives

http://mcc.ca/examinations/objectives-overview/

For LMCC Part 1

Objectives applicable to this lecture:

– Scrotal Mass (90-0)
– Scrotal Pain (91-0)
Objectives

Scrotal Mass:

1. Given a patient with a scrotal mass:
   1. To list and interpret key clinical findings
   2. To list and interpret critical investigations
   3. Construct an initial management plan

Causal Conditions:

• Hydrocele
• Varicocele
• Hematocele / hematoma
• Testis malignancy
• Inflammatory / Infectious

2. Recognize testicular torsion
Approach to Scrotal Mass

- Infectious
- Anatomic
- Malignant
Approach to Scrotal Mass

Scrotal Mass

Infectious
- Painful
  - Epididymitis
  - Orchitis

Anatomic
- Hydrocele
- Varicocele
- Spermatocele
- Torsion of Testis
- Torsion of Appendix Testis

Malignancy
- Testis Tumor
Approach to Scrotal Mass

• **History**
  – Pain, onset, firmness, hx of undescended testis, STD’s, LUTs, urethral discharge

• **Physical Exam**
  – Location of mass (testis, epididymis, scrotum)
  – Tenderness
  – Transillumination

• **Investigations**
  – U/A – pyuria with epididymitis / orchitis
  – U/S – ++ Sensitive and specific for testicular tumors
Infectious Scrotal Mass

Epididymitis

– Young adults
  • often associated with STI, chlamydia
– Older adults
  • often non-STI, E Coli.
– Tender, indurated epididymis

• Orchitis
  – May be caused by Mumps virus
  – Swollen ++ tender testicles, often bilateral
Anatomic Scrotal Mass: Hydrocele

- **Hydrocele**
  - Fluid within tunica vaginalis
  - Called “communicating hydrocoele” if *processus vaginalis* is patent

**History**
- Typically painless

**Physical Exam**
- Transilluminates
- Cannot palpate testicle

**Treatment**
- No Rx required unless for cosmetic reasons or bothersome size
Anatomic Scrotal Mass

- Peritoneal cavity
- Obliterated processus vaginalis
- Vas
- Tunica vaginalis

Normal, Inguinal hernia, Complete inguinal hernia, Hydrocele of cord, Communicating hydrocele
Anatomical Scrotal Mass: Spermatocele

Spermatocele
- Cystic dilatation (aneurysm) of epididymal tubule

History
- Painless

Physical Exam
- Transilluminates
- Can palpate body of testicle separate from the mass

Treatment
- No treatment required unless for cosmetic reasons
Anatomical Scrotal Mass: Varicocele

• Varicocele
Anatomical Scrotal Mass: Varicocele

- Varicocele
  - Varicosities of pampiniform plexus
    - 90% on left side; seen in 15% of male population
    - Associated with male factor infertility but most men with varicoceles can expect normal fertility

History
  - Typically asymptomatic, cosmetically “bag of worms”
  - Increases in size with valsalva or standing position

Physical Exam
  - Bag of Spaghetti in scrotum palpating cord

Treatment
  - Surgical or angiographic sclerosis
    - Results in improvement in semen parameters (number, motility, morphology) in 70% to 90% of cases
Anatomical: The Acute Scrotum

• Testicular torsion
  – Surgical Emergency!!
  – Only definitive Diagnosis is Surgical Scrotal Exploration
  – Typically in 12-18yr olds
  – 6 hr window prior to irreversible testicular ischemia
  – Associated with ‘Bell Clapper Deformity”
  – Detort – “like opening a book”
Anatomic Scrotal Mass: The Acute Scrotum

• Testicular Torsion
  Physical Exam
    • High riding, horizontal testicle
    • Absent cremasteric reflex
    • Prehn Sign: relief of pain when supporting the scrotum
      – suggests epididymitis
  Investigations
    • U/A – R/O pyuria (epididymitis)
    • Doppler U/S only if diagnosis unclear
  Treatment
    • Surgical detorsion and orchidopexy
Acute Scrotum

- **Epididymitis**
  - Infection of the epididymis
    - <35yrs of age – Chlamydia, gonorrhea
    - >35yrs of age – E. Coli

**History**
- Pain, Swelling testicle +/- dysuria +/- fever

**Physical Exam**
- Indurated, swollen and acutely painful epididymis, +/- erythema

**Investigations**
- CBC
- U/A
- +/- Doppler US of testis

**Treatment**
- Antibiotics x4 weeks + NSAIDS, and Ice PRN
Epididymitis
Acute Scrotum: Torsion of Appendix Testis

Torsed Appendix testis
  – May mimic Testicular Torsion

Physical Exam
  – Blue Dot sign
  – Testis may be inflamed/tender, point tenderness to appendix testis
  – Not likely elevated, NO horizontal lie

Investigations
  – Doppler US to assess testis perfusion
  – U/A

Treatment
  – Conservative, symptom management if confirmed
  – Urological assessment.
Approach to Scrotal Mass

- **Infectious**
  - Painful
    - Epididymitis
    - Orchitis
  - • Hydronephrosis
  - • Hydrocele

- **Anatomic**
  - • Hydrocele
  - • Varicocele
  - • Spermatocoele
  - • Torsion of Testis
  - • Torsion of Appendix Testis

- **Malignancy**
  - • Testis Tumor
Testicular Cancer

• Typically occurs in young healthy Men.

• Very good cure rates Even for Metastatic Disease!
Testicular Cancer

Testis Cancer

Primary

Germ Cell Tumors

Seminoma

Nonseminoma

Secondary

Non-Germ Cell Tumors
Testicular Cancer

- Testis Cancer
  - Primary
  - Secondary
    - Germ Cell Tumors
      - Nonseminoma
      - Seminoma
    - Non-Germ Cell Tumors
Germ Cell Testicular Cancer

• Seminoma

• Non-Seminoma
  – Embryonal Carcinoma
  – Teratoma
  – Teratocarcinoma (Teratoma + Embryonal Carcinoma)
  – Choriocarcinoma
  – Yolk Sac Tumour (typically infants)
Testicular Cancer

- Testis Cancer
  - Primary
  - Secondary
    - Germ Cell Tumors
      - Nonseminoma
      - Seminoma
    - Non-Germ Cell Tumors
Non-Germ Cell Testicular Cancer

• Leydig Cell Tumor
• Sertoli Cell Tumor
Testicular Cancer

Testis Cancer

Primary

Germ Cell Tumors

Nonseminoma

Seminoma

Non-Germ Cell Tumors

Secondary
Secondary Testicular Cancer

- Lymphoma
- Leukemia
Testicular Cancer

• Presentation
  – Typically painless intratesticular mass discovered on self examination
  – Age 15-35
    • Albeit some tumor subtypes cluster in infancy and some at later age (60’s)
Testicular Cancer

• Investigations
  – Labs
    • B-HCG
      – Produced by choriocarcinoma & in some Seminomas
    • Alpha-fetoprotein
      – Produced by Yolk Sac, Embryonal Carcinoma & Teratocarcinoma
    • LDH
      – Correlates with tumor volume
  – Imaging
    • Scrotal U/S
    • CT Abdo and Pelvis: assess for retroperitoneal mets
    • CXR
    • +/- CT Head
Testicular Cancer

• Treatment:
  – Radical Orchietomy
    • ALWAYS Inguinal approach
    • NEVER scrotal approach
  – PLUS…
Staging

Large retroperitoneal mass in patient with right testicular NSGCT
Lymphatic Spread: RPLND
Question #1

• 4 causes of scrotal masses or swellings that are painless

• 3 causes of acutely painful testicle
Differential Diagnosis of a Scrotal Mass

- hydrocoele
- spermatocoele
- varicocele
- testicular cancer

- epididymitis
- testicular torsion
- torsion of the testicular appendix
Acutely Painful Scrotum

In adolescents and young men, with no history of trauma, the possibilities include:

- Testicular Torsion
- Epididymitis
- Torsion of the Appendix Testis

Testicular torsion and torsion of the appendix testis are extremely uncommon in older men.
Question #2

Lance Armstrong has noticed a “swelling” in his remaining testicle.

What features on history or physical exam suggest a testicular cancer?
Testicular cancer

- Age 15 – 35 yrs
- History of cryptorchidism or previous testicular cancer
- Painless
- Does not transilluminate
-Feels hard and irregular
- Constitutional symptoms (weight loss)
Self - Examination

Self – examination should be taught to young men

They need to be shown the difference between the testicle and the epididymis

They need to report any hard or suspicious lesions immediately