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# UBC Department of Urologic Sciences Lecture Series

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## 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



MEDICAL COUNCIL  
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# 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

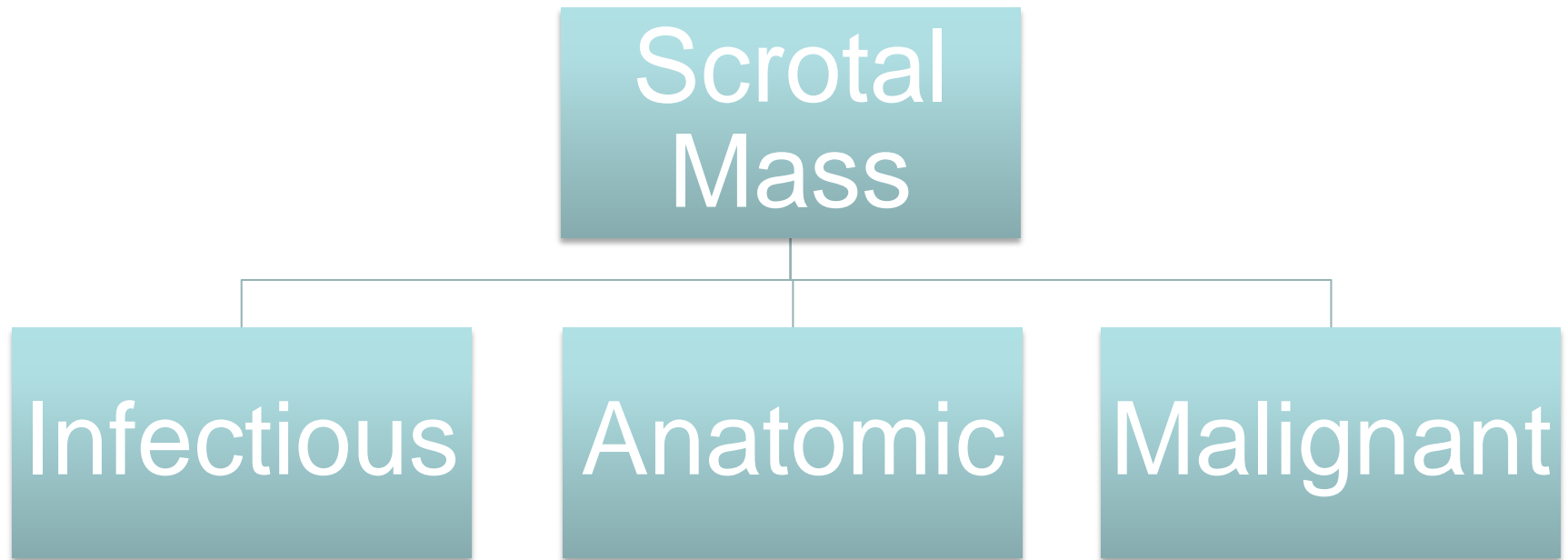
## Scrotal Mass:

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



# 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

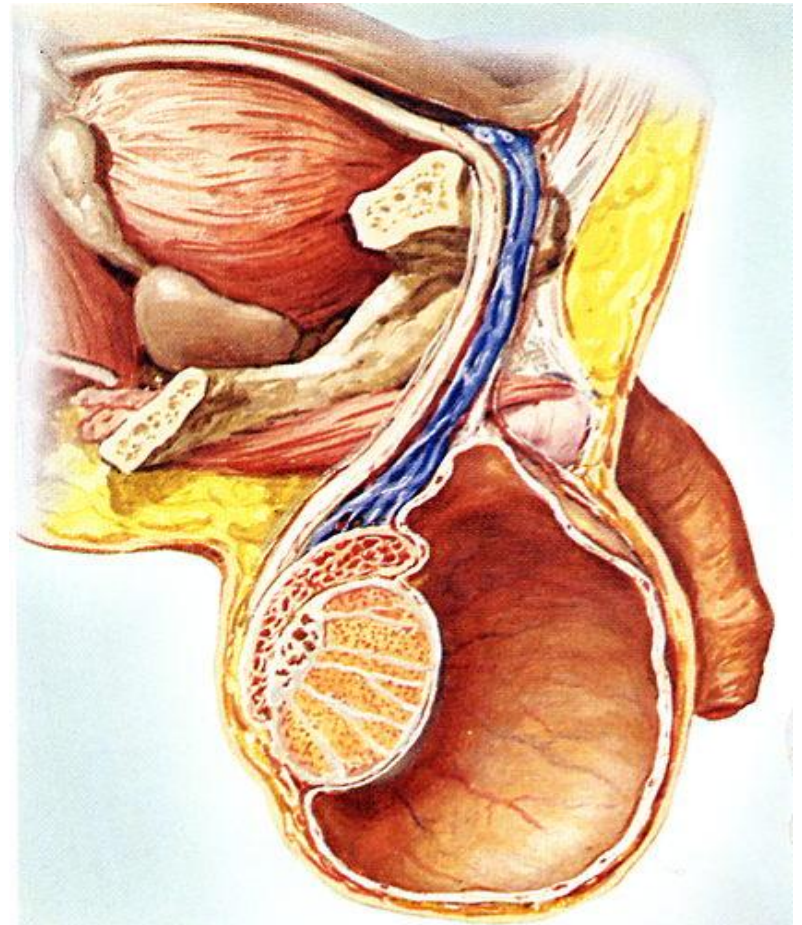
- Typically painless

## Physical Exam

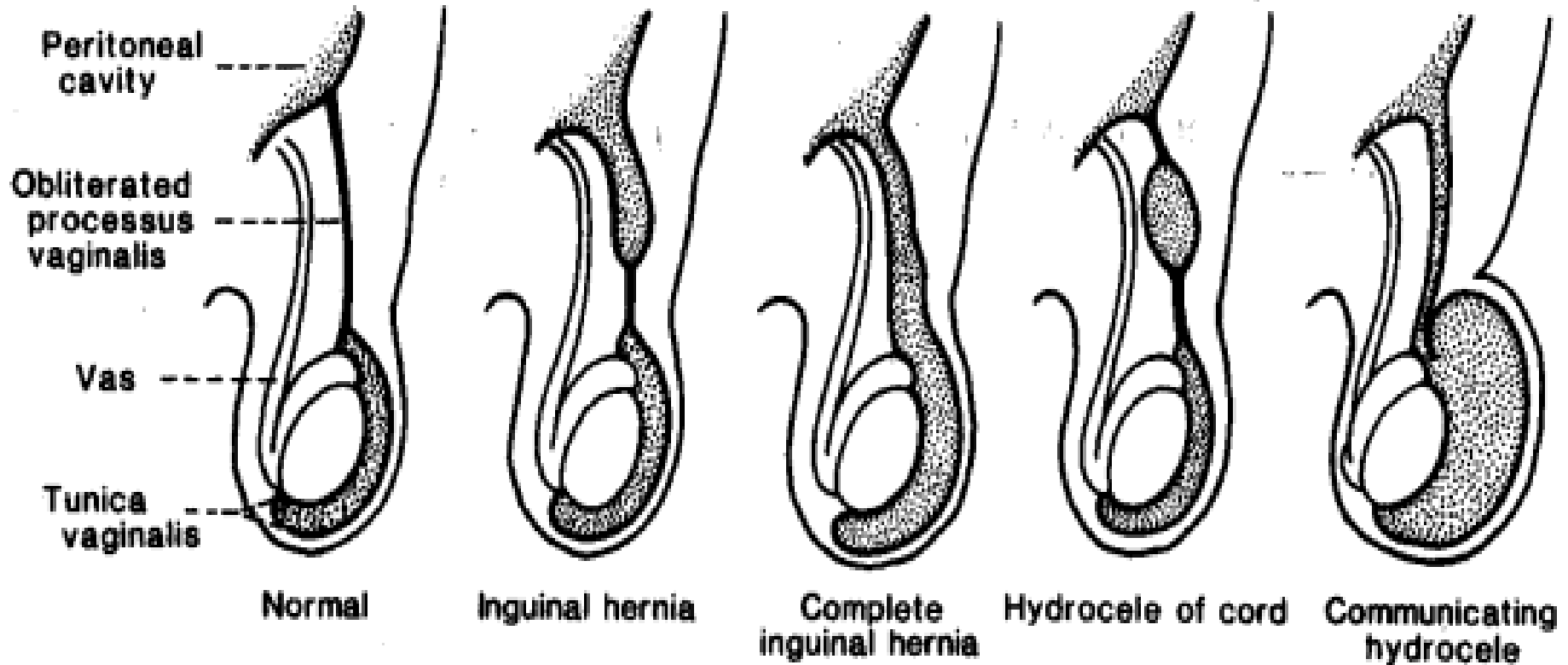
- Transilluminates
- Cannot palpate testicle

## Treatment

- No Rx required unless for cosmetic reasons or bothersome size



# Anatomic Scrotal Mass



# Anatomical Scrotal Mass: Spermatocele

## Spermatocele

- Cystic dilatation (aneurysm) of epididymal tubule

## History

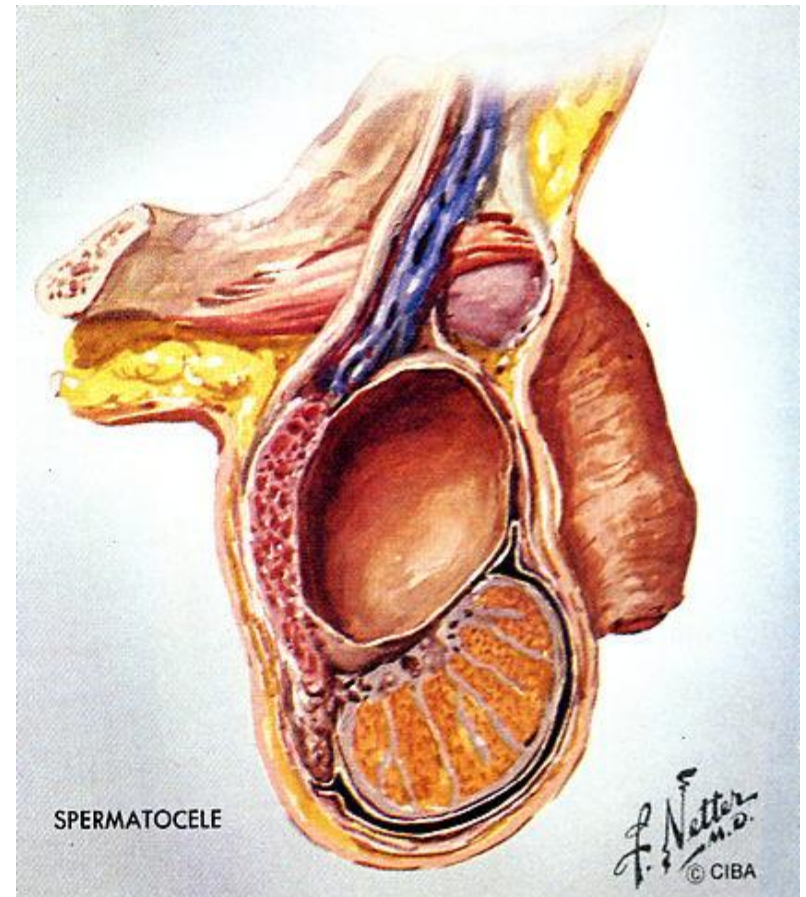
- Painless

## Physical Exam

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

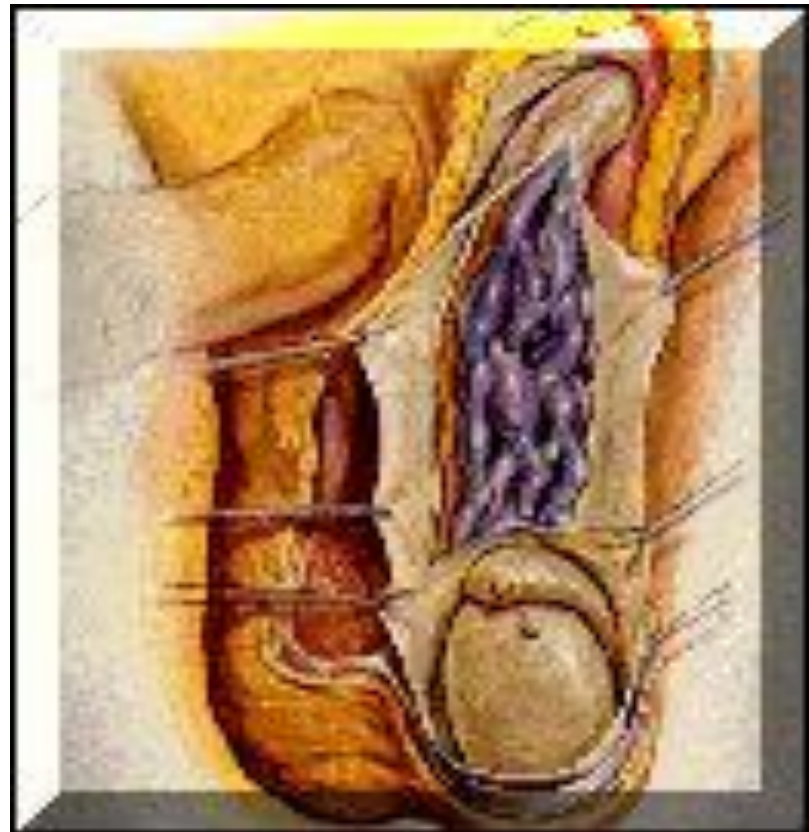
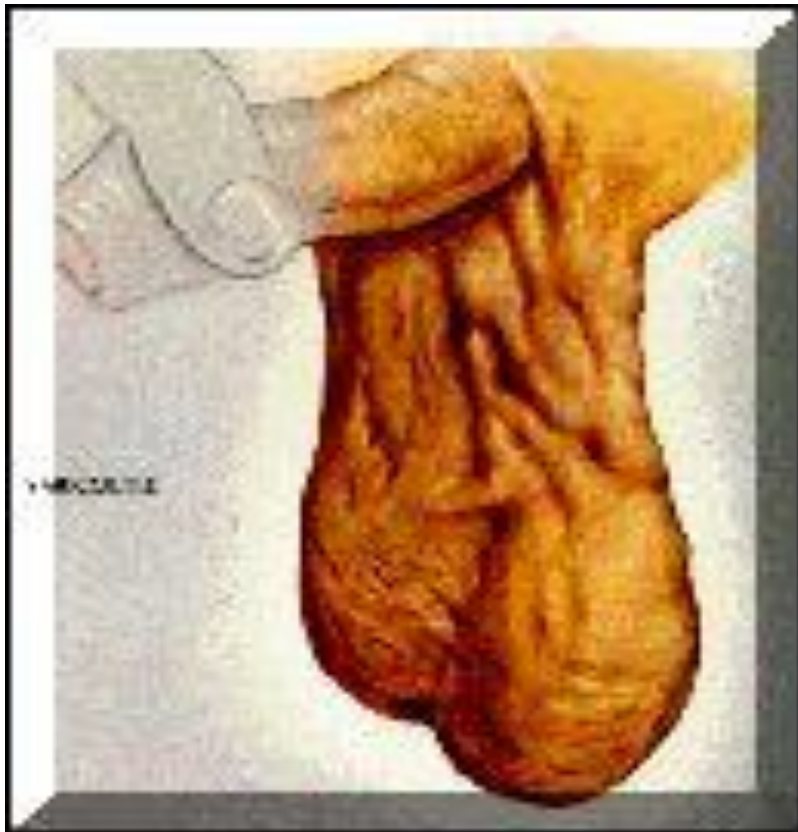
## Treatment

- 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 varicocoeles can expect normal fertility

## History

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

## Physical Exam

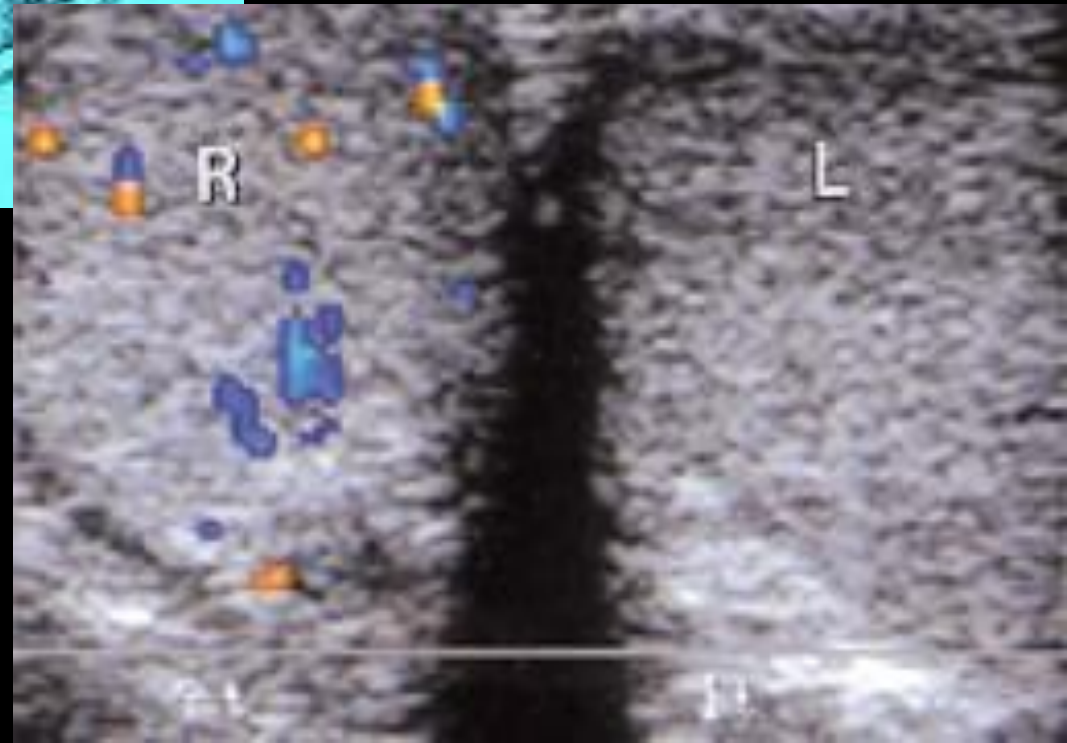
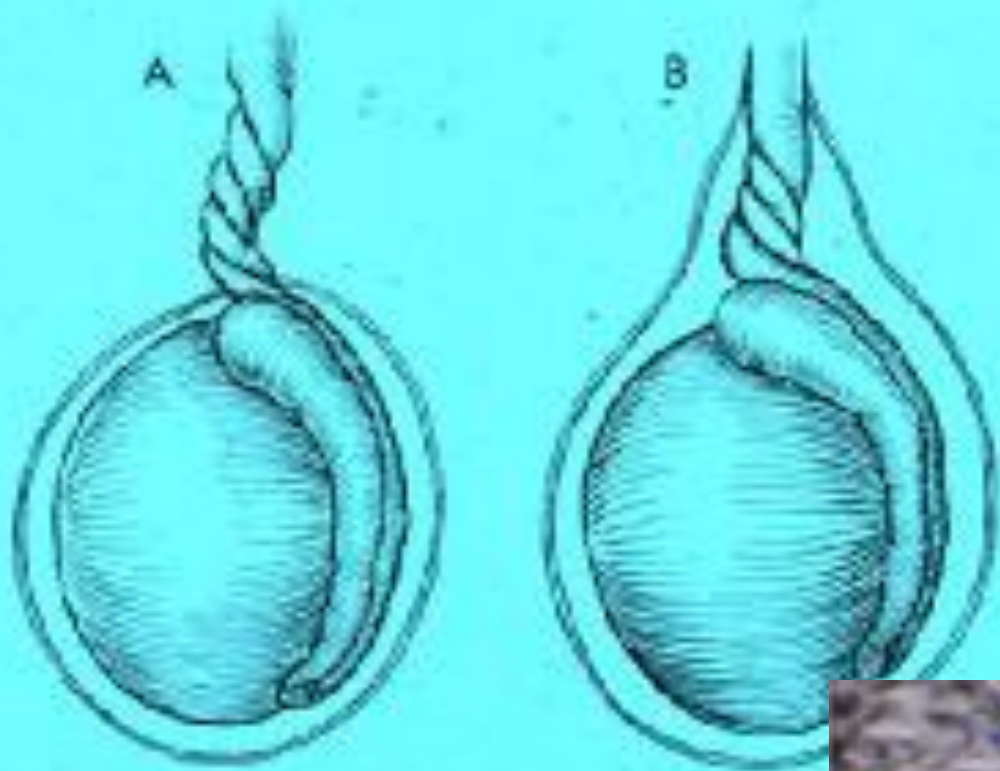
- Bag of Spaghetti in scrotum palpating cord

## 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

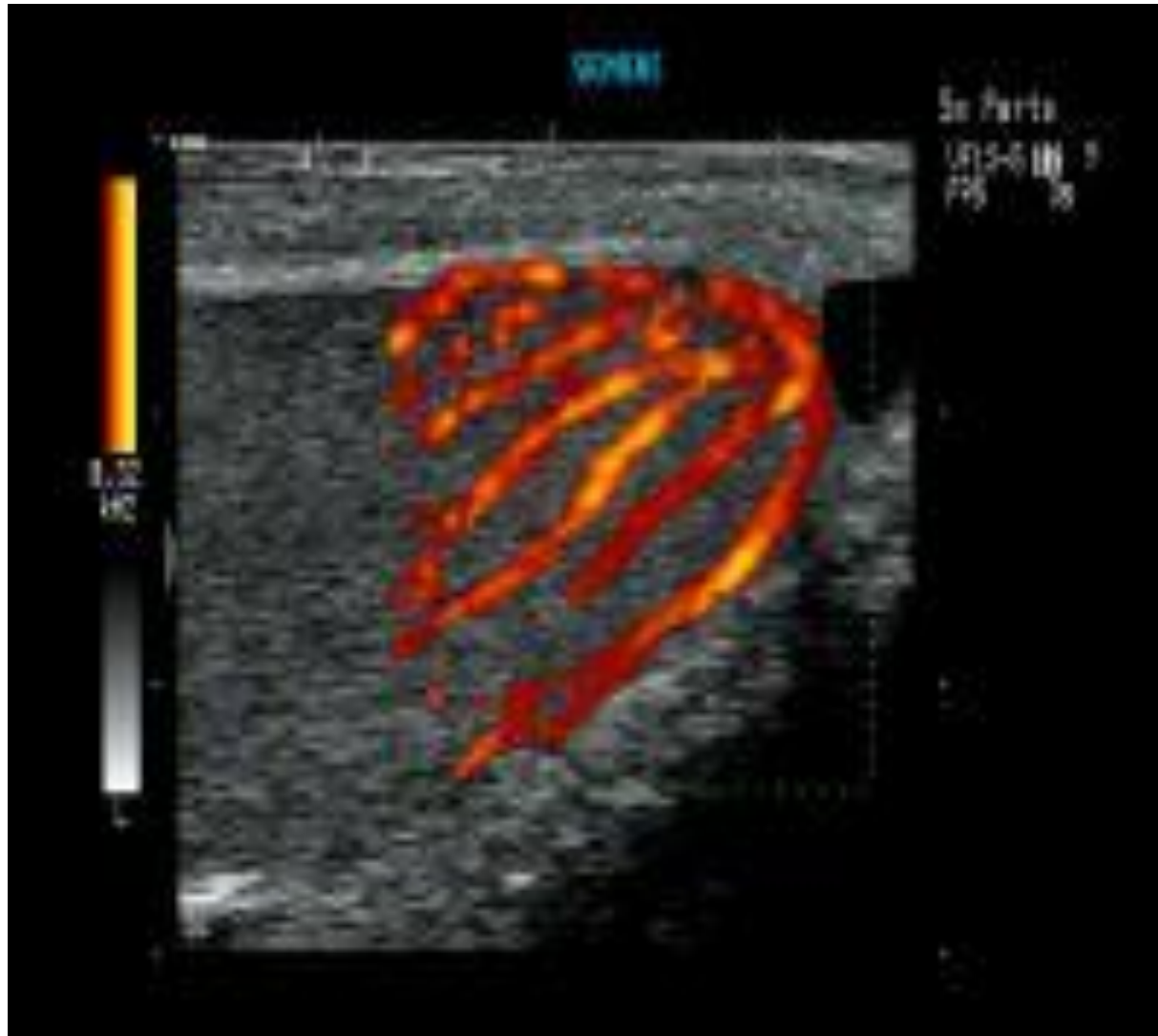
## Investigations

- 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

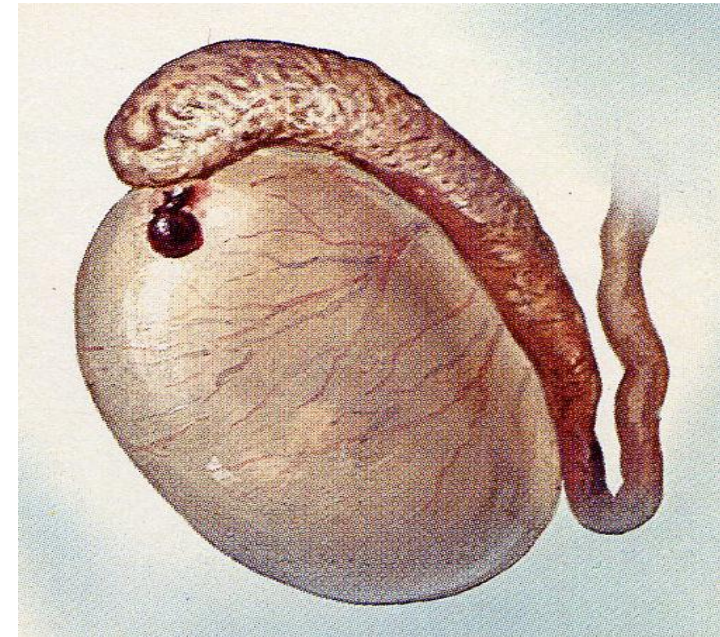
- Blue Dot sign
- Testis may be inflamed/tender, point tenderness to appendix testis
- Not likely elevated, NO horizontal lie

## Investigations

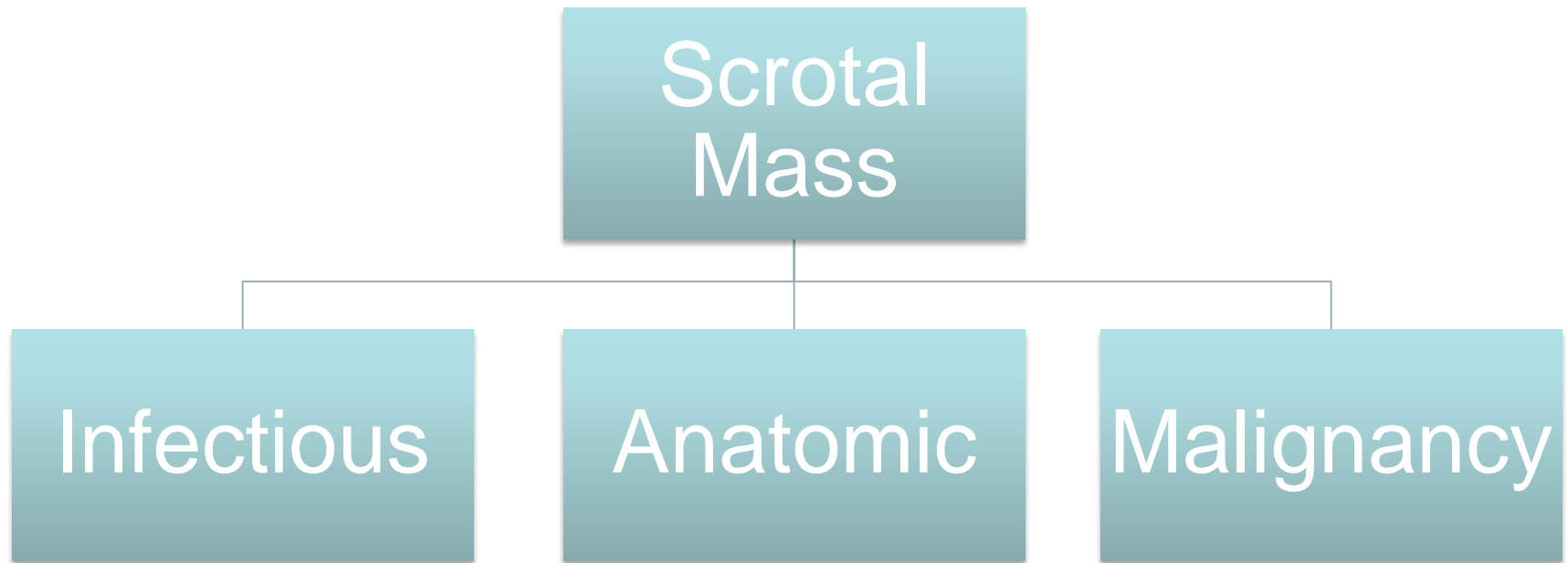
- Doppler US to assess testis perfusion
- U/A

## Treatment

- Conservative, symptom management if confirmed
- Urological assessment.



# Approach to Scrotal Mass



## PAINFUL

- Epididymitis
- Orchitis

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

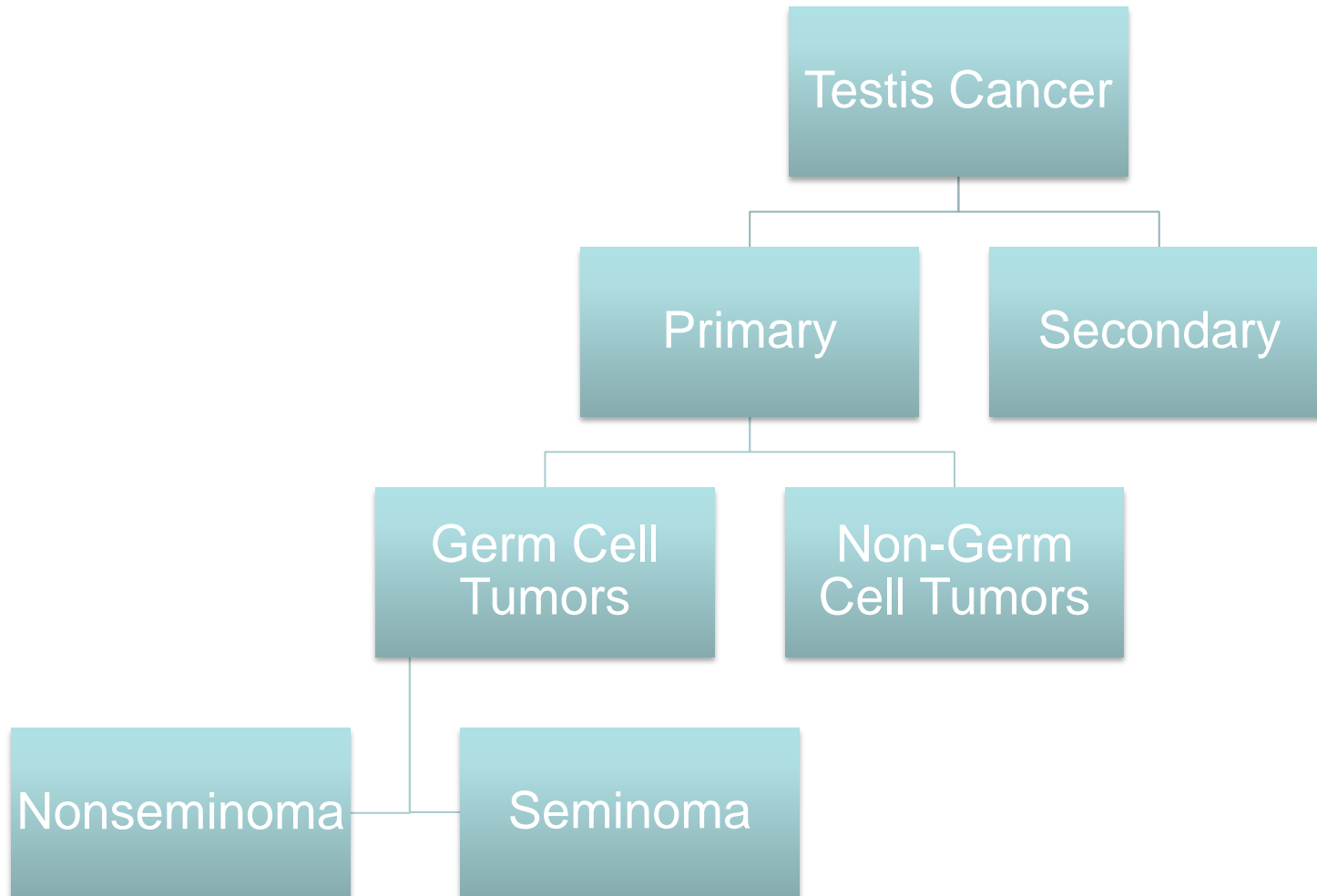
- Testis Tumor

# Testicular Cancer

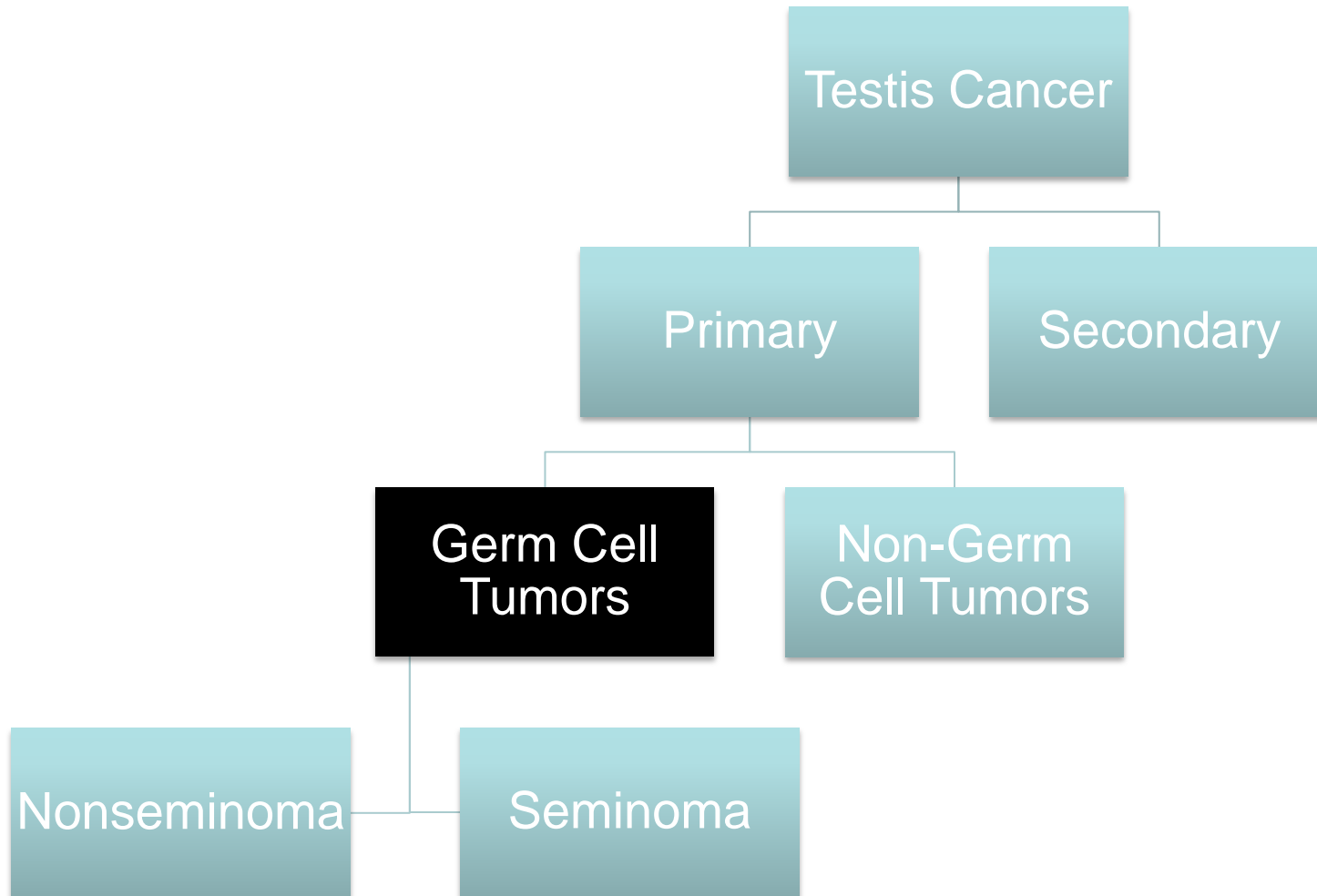
- Typically occurs in young healthy Men.
- Very good cure rates Even for Metastatic Disease!



# Testicular Cancer



# Testicular Cancer

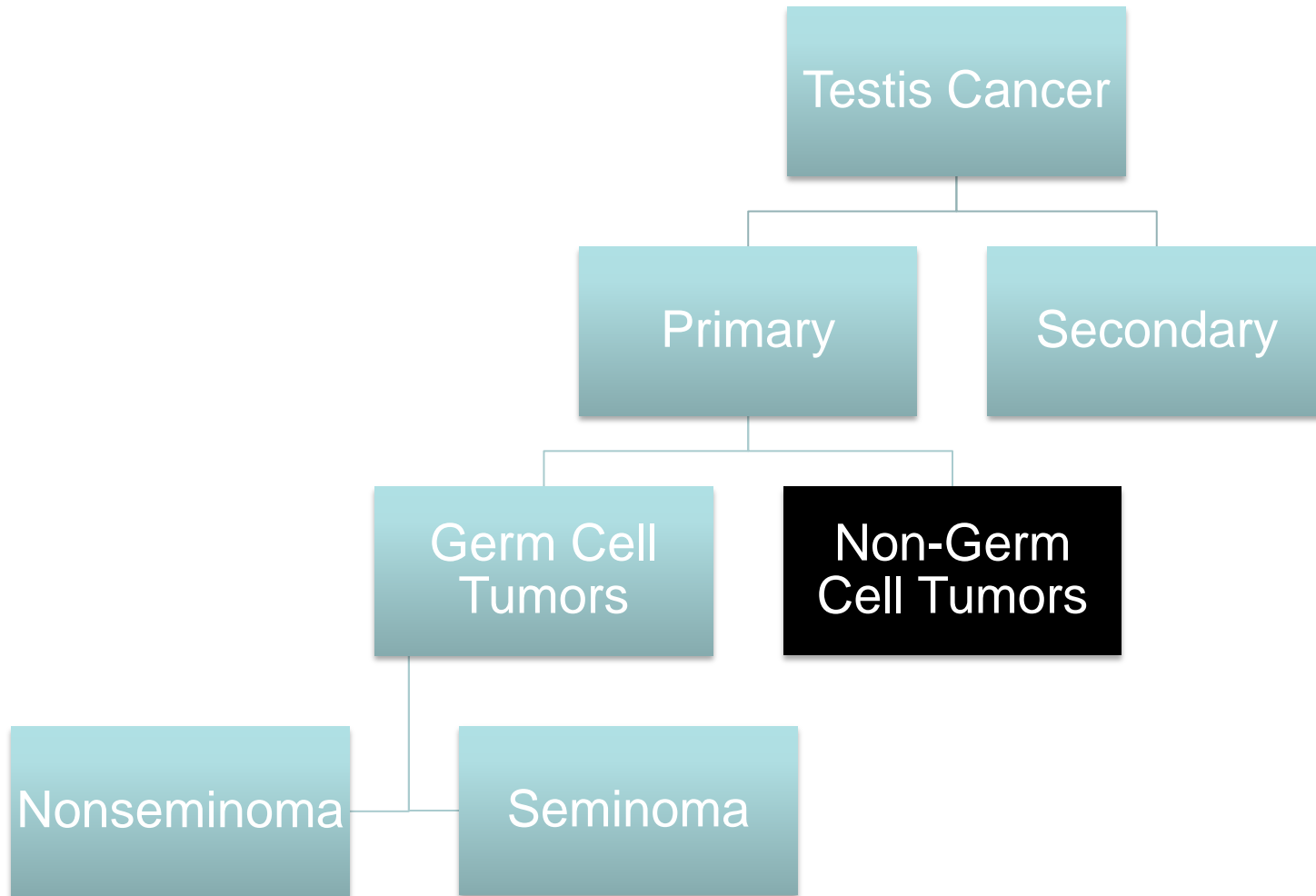




# Germ Cell Testicular Cancer

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

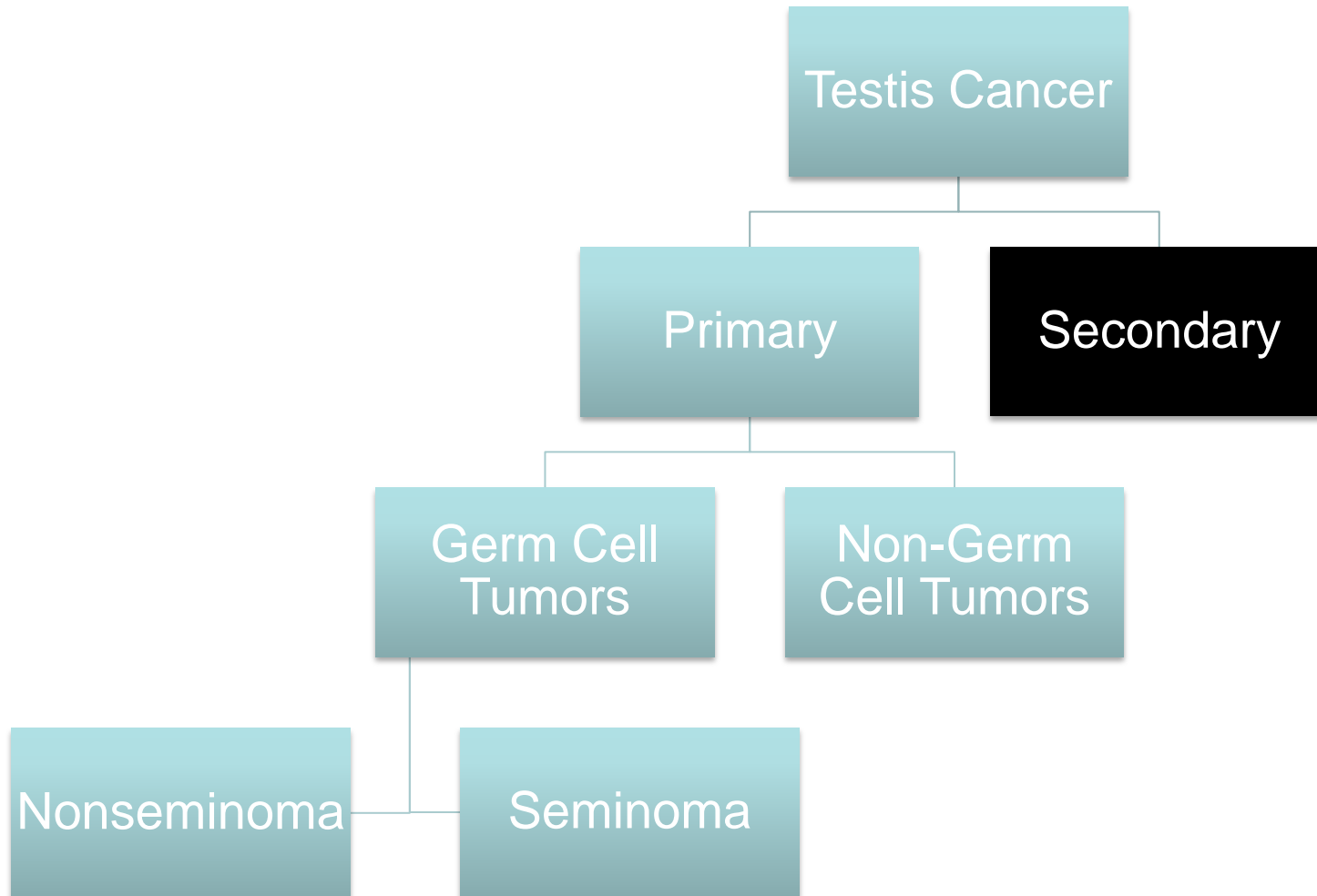
# Testicular Cancer



# Non-Germ Cell Testicular Cancer

- Leydig Cell Tumor
- Sertoli Cell Tumor

# Testicular Cancer



# 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

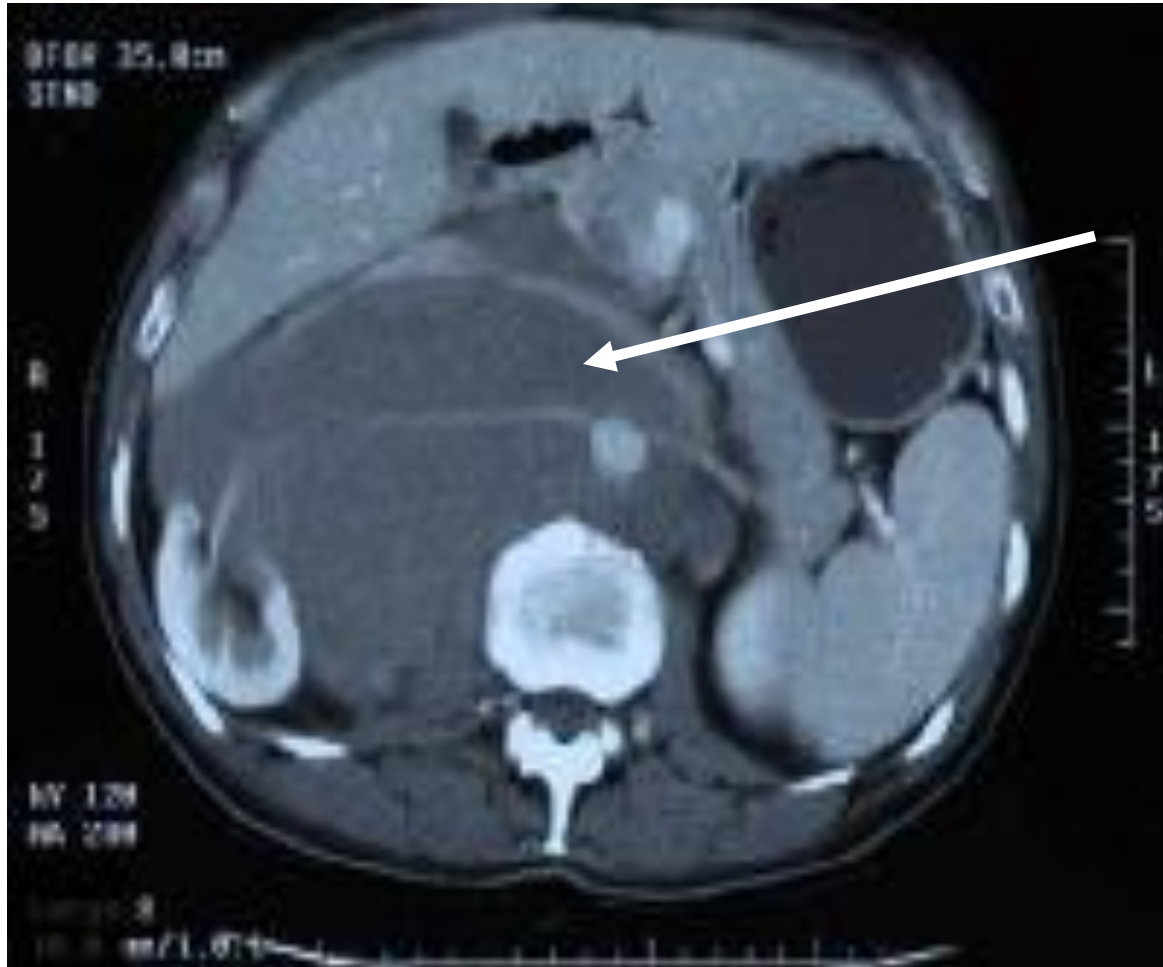
# Testicular Cancer

- Treatment:
  - Radical Orchiectomy
    - ALWAYS Inguinal approach
    - NEVER scrotal approach
  - PLUS...



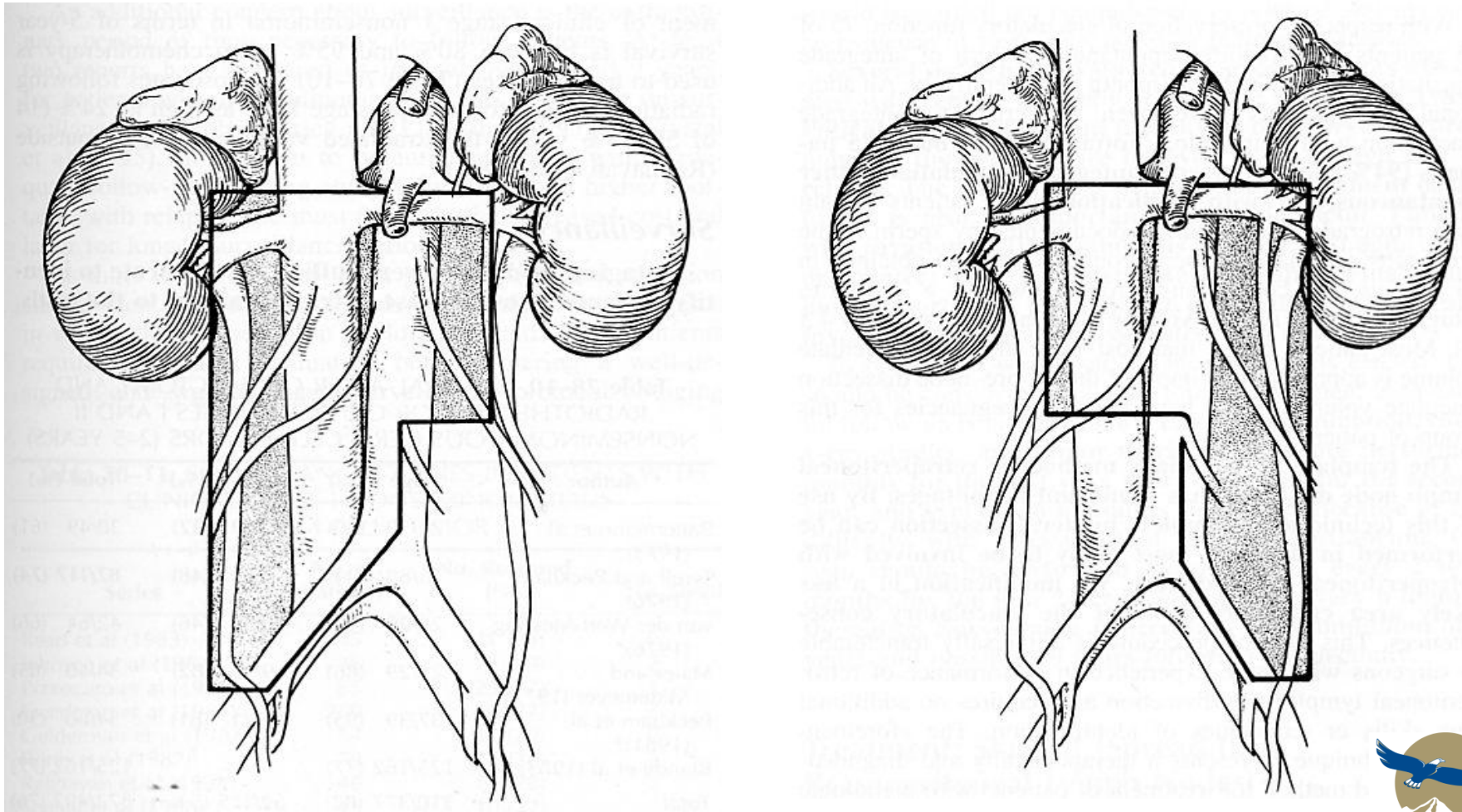


# Staging



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
  - spermatocele
  - 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

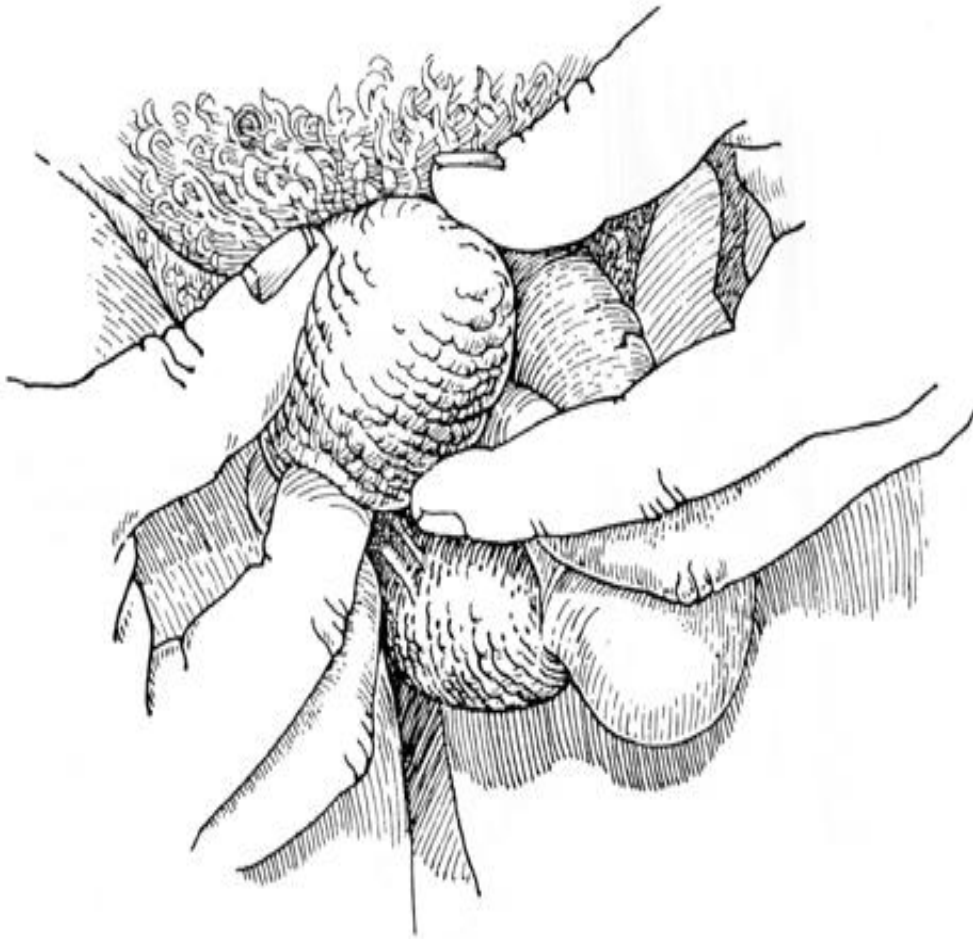
Lance Armstrong has noticed a “swelling” in his remaining testicle.

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