**Most important diagnosis to rule out- Testicular torsion**
- Don’t let the patient sit out in triage for a long time
- **TIME = TESTICLE**

**First decision-** patient in distress or no apparent distress
- No distress- can get a full history and exam
- Distress- rapid exam and history, ultrasound, urology consult

**Usual age of torsion**
- Bimodal distribution- neonates and teenagers (average age 14)
- However, 30% of torsions are over 21 years old

**Anatomical causes of torsion**
- “Bell clapper deformity”- testicle is not attached anteriorally to the scrotum like normal
- This allows the testicle to twist on itself -> testicle ischemia

**History**
- Onset of pain- When did the pain start
- What was the patient doing when pain started?
- What makes pain better or worse?
- Sudden or gradual onset?
- Constant or intermittent pain?
- Fevers? Urinary symptoms? Abdominal pain?
- Penile discharge? Lesions? Rectal pain?
- Medications, past medical and surgical history, allergies

**PEARL-** Don’t discount torsion because patient didn’t have direct trauma to the testicle. Mechanisms can be minor or non-existent and torsion can occur during sleep (cremaster contractions during REM sleep)

**Exam**
- Do a rapid head to toe exam
- Don’t neglect the abdomen! Pain in testicle may be referred from abdomen to the testicle
- Examine the groin for masses, swelling, and hernias
- Try to have the patient stand up to do a testicular exam

**Exam (cont.)**
- Check the lie of each testicle
  - Should be completely vertical- if testicle is at an angle this strongly suggests torsion
- Check cremaster reflex
  - Slide glove finger up thigh- should see scrotum retract
  - Lack of cremaster reflex strongly suggests torsion
- Palpate each testicle individually
  - Start on the unaffected testicle- keeps patient from startling and allows you to get a better exam
  - Have the patient point to where the pain is
  - Palpate entire testicle
  - Epididymis is located on posterior aspect about 2/3rs of the way from the top of the testicle
- Prehn’s sign
  - Elevation of the testicles reduces patient’s pain
  - Suggests epididymitis (reduces stretch on epididymis)

**PEARL- DO NOT use Prehn’s sign to solely rule out torsion. 30% of patients with torsion will have a positive Prehn’s sign!**
- Check for hydrocele (fluid collection) and varicocele (dilated scrotal veins)

**Patient in lots of distress and/or strong suspicion of torsion?**
- **TIME = TESTICLE**
- Call ultrasound and urology consult simultaneously
- Don’t delay- salvage rate starts decreasing at 4 hours
- Torsion is a clinical diagnosis but few urologists will take patient to the OR without an ultrasound so bump your patient to the front of the line

**PEARL-** Get an ultrasound in all patients with testicular pain. You (and the patient) can’t afford to miss torsion- BUT- ultrasound can be falsely negative in a patient who is torsing and de-torsing. The patient may have to go to the OR if the diagnosis and/or ultrasound is equivocal

**Give the patient pain control**
- IV morphine, Dilaudid (hydromorphone), fentanyl
Other testicular diagnoses

Epididymitis - inflammation of the epididymis
- Usually caused by GC/Chlamydia, rarely sterile urine reflux
- Pain can be sudden or gradual - can mimic torsion
- Check a urine
- In general - men <35 y.o. - Sexually transmitted infections (STIs)
- Men >35 y.o. - enteric organisms (E. Coli)
- However - lots of overlap

Treatment
- Pain control - Ibuprofen 400-800mg PO three times per day, opioid for breakthrough pain (Percocet/oxycodone, Vicodin/hydrocodone)
- Scrotal elevation - jock strap or two pairs of “tightly whities”
- Antibiotics
  - STIs - Rocephin (ceftriaxone) 250mg IM and doxycycline 100mg PO twice a day x10 days
  - Enterics - Levaquin (levofloxacin) 500mg PO daily x10 days

PEARL - No harm in treating patient with ceftriaxone, doxycycline and levofloxacin to cover all bases if cause is unclear or STI test takes days to come back

Torsion of the testicular appendage
- A small part of the testicle that is not necessary for function
- Can twist on itself and cause pain
- Located close to epididymis - can mimic epididymitis on ultrasound
- “Classic” sign - blue dot sign near epididymis
- Treatment - pain control, scrotal support, antibiotics if ultrasound is equivocal or suggests epididymitis

Varicocele/hydrocele - PCP/urology routine followup
- Hydrocele - fluid collection in testicle
  - Small amount of fluid inside testicle is can be normal
- Varicocele - dilation of scrotal veins
  - Causes dull aching pain

Testicular masses
- Most often found on external exam or ultrasound
- Get urology followup (urgent vs. in ED)
- Urology may request workup labs
  - Beta HCG (produced by some tumors)
  - Alpha feto-protein (usually a send-out test)
  - LDH

Inguinal hernias
- First question - does hernia reduce?
- If hernia reduces - routine followup with general surgeon return precautions for hernia that doesn’t reduce or causes lots of pain
- If hernia doesn’t reduce - consult surgeon
  - Incarcerated - irreducible hernia
  - Strangulated - hernia that twists on itself
  - If less incarcerated less than 4 hours can try tilting patient head down on the bed, pain control to reduce
  - Consult a surgeon before doing this for advice

Mumps
- Viral infection mostly eradicated by vaccination
- Causes testicular pain and swelling
- Supportive care, pain control

Fournier’s gangrene - Emergent surgical diagnosis
- Aggressive deep space groin infection
- Most common in immunocompromised and diabetics
- Discoloration of the skin, crepitus, tenderness
- Get STAT CT of abdomen/pelvis with IV contrast
- Antibiotics - Zosyn (piperacillin/tazobactam) and Clindamycin

Manual detorsion
- If patient has torsion and urologist is far away and/or patient has torsed a long time then you may have to attempt manual detorsion
- “Open the book” - rotate testicle to the ipsilateral thigh
- Torsions may be anywhere from 180-720 degrees
- “Open the book” only works if testicle rotated medially
- 30% of children in one study had lateral rotation
- Attempt detorsion - successful if pain relieved, get repeat ultrasound and go to OR non-emergently to secure testicle to prevent re-occurrence
- If pain worse then go the other direction
- Don’t totally knock the patient out - need to be awake to see if pain gets better

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