Urological Emergency Non Traumatic

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- Urologic emergency arises when a condition require rapid diagnosis and immediate treatment
- Compared to other surgical fields there are relatively few emergencies in urology

Urological Emergencies

- Non traumatic
  1. Hematuria
  2. Renal Colic
  3. Urinary Retention
  4. Anuria
  5. Acute Scrotum
  6. Urosepsis
- Traumatic
  1) Renal
  2) Ureteral
  3) Bladder
  4) Urethral
  5) Genital

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Non traumatic emergency

Hematuria

- **Blood in the urine**
- **Types:**
  - Macroscopic or microscopic hematuria (the presence of >3 red blood cells per high power microscopic field).
  - Painless or painful.
  - Initial / Terminal / Total

Hematuria : Pain-Full/Less

- Painfull : cause by stone, infection, foreign body
- Painless : cause by malignancy (bladder tumor,,)

Hematuria : Location

- Initial : Uretra
- Terminal : Bladder neck
- Total : Kidney to bladder

Pseudo/False Hematuria

Etiologi

- Drug : rifampicin, piridium, fenolftalein
- Food
- Injury : hemoglobinuria, mioglobinuria

Non traumatic emergency

Presentation

- Hematuria
- Anemia
- Urine retention or ureteric colic (Clot retention)

- Work Up :
  - History
  - Examination
  - Investigation :
    - Urine culture and cytology
    - Renal US
    - Flexible cystoscopy,
    - IVU or computed tomography (CT).
  - Treat the cause

Non traumatic emergency

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Acute flank pain

- The commonest urologic emergency.
- One of the commonest causes of the "Acute Abdomen" .
- Sudden onset of severe pain in the flank
- Most often due to the passage of a stone formed in the kidney, down through the ureter.

Non traumatic emergency

Renal colic….

- Work Up :
  - History
  - Examination: patient want to move around, in an attempt to find a comfortable position.
  - +/- Fever

Non traumatic emergency

Renal colic….

- Radiological investigation :
  - KUB / USG
  - IVU
  - CT-Scanning
  - MRI

Treatment Renal Colic

- Analgetic :Suppositoria/intravenous ……. outpatient
- Hospitalized
- Stenting
- Definitive …… stable condition

Non traumatic emergency

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Urinary Retention

Non traumatic emergency

- Acute Urinary retention
- Chronic Urinary retention

Acute urinary retention…

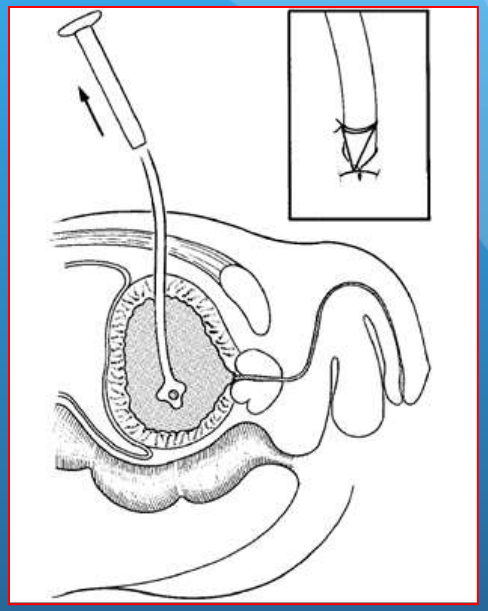
Non traumatic emergency

- **Causes :**
  - **Men:**
    - Benign prostatic enlargement (BPE) due to BPH
    - Carcinoma of the prostate
    - Urethral stricture
    - Prostatic abscess
  - **Women**
    - Pelvic prolapse (cystocoele, rectocoele, uterine)
    - Urethral stricture;
    - Urethral diverticulum;
    - Post surgery for ‘stress’ incontinence
    - pelvic masses (e.g., ovarian masses)

Non traumatic emergency

Acute urinary retention…

- **Initial Management :**
  - Urethral catheterisation
  - Suprapubic catheter (SPC)
- **Late Management:**
  - Treating the underlying cause



Acute urinary obstruction

→ Medical/Hospital

Manifestasion

- Colik/anuria→ Upper tract
- Retensi urine→ Lower tract

Upper urinary tract

- Diversi urine→ emergency→ Nefrostomi
- Denitif treatment

→ **After stable condition**

- Colik→ NSAID/poten analgetic

Retensi urine

acumulation urine in bladder → more then bladder capacity

Cause

- Inadequate bladder contraction
- Urethral obstruction
- Incoordination detrusor-uretra/DSD

Treatment

- Urine evacuation from bladder→ catheterization/sistostomi
- Treatment primary disease→ stable condition

Chronic urinary retention

Non traumatic emergency

- Obstruction develops slowly, the bladder is distended (stretched) very gradually over weeks/months, so pain is not a feature .

- Presentation:
  - Urinary dribbling
  - Overflow incontinence
  - Palpable lower suprapubic mass

Non traumatic emergency

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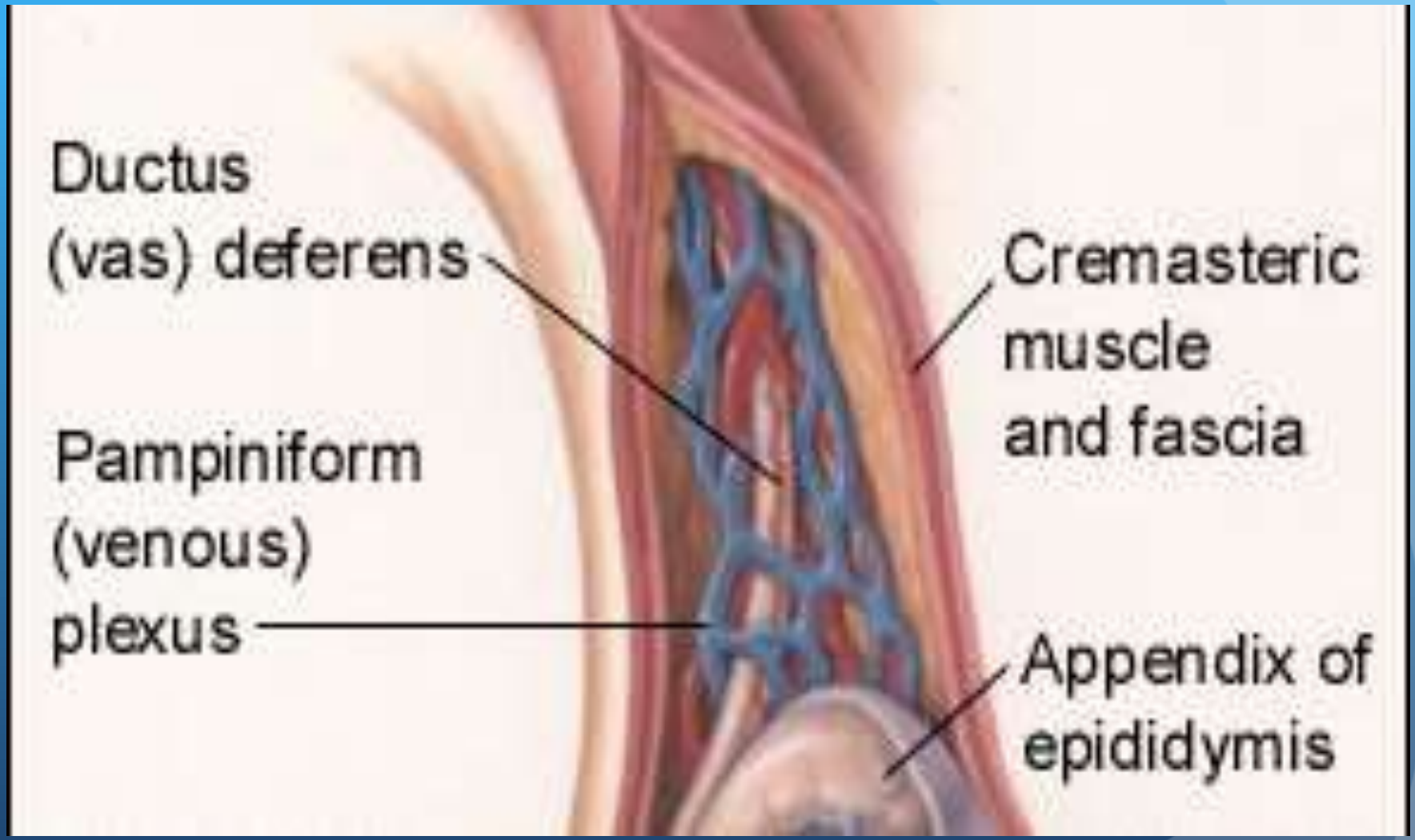
Acute Scrotum

Non traumatic emergency

- Emergency situation requiring prompt evaluation, differential diagnosis, and potentially immediate surgical exploration

ANATOMY


Ductus
(vas) deferens
Pampiniform
(venous)
plexus
Cremasteric
muscle
and fascia
Appendix of
epididymis

DEFINITION

- Pain
- Swelling
- Erythema
- Acute onset

- **ALWAYS AN EMERGENCY !!!**

WHY AN EMERGENCY?

- Potential for testicular loss
- Infertility
- Legal action against hospital and physicians
- Accurate diagnosis limited by similarity of presentation and physical findings of different causes
- Radiologic techniques helpful, but may delay treatment
- Operation may be needed for diagnosis and therapy purposes

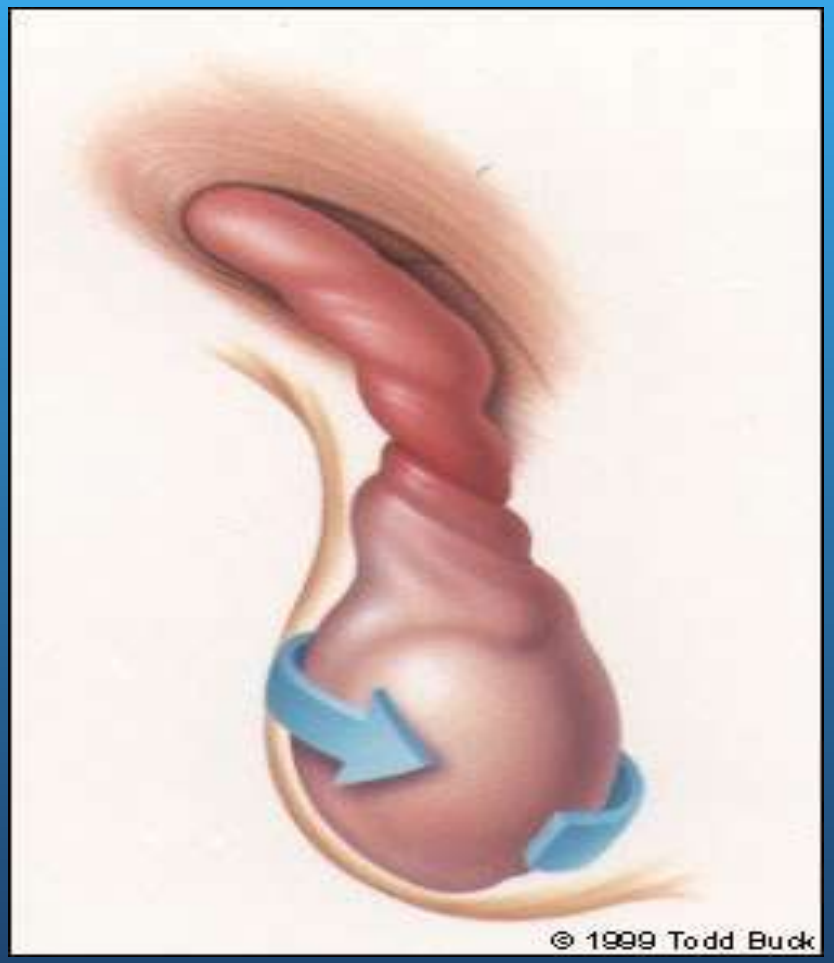
“ WHEN IN DOUBT, OPERATE”

AGE FACTOR

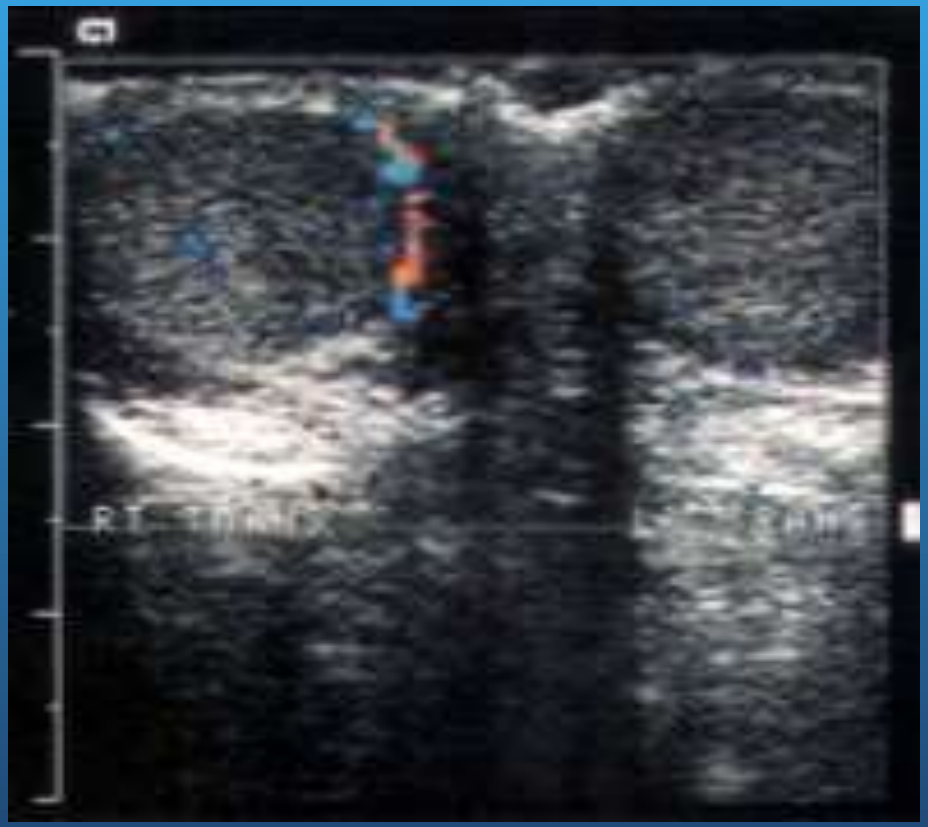
- **Can occur in any age group !**
- Extravaginal torsion in neonates
- Childhood and preadolescene, intravaginal testicular torsion, torsion of appendix testis
- Epididymitis in the sexually active patient

A PUBERTAL, NON-SEXUALLY ACTIVE BOY WITH AN ACUTE SCROTAL CONDITION HAS TESTICULAR TORSION UNTIL PROVEN OTHERWISE

EXTRAVAGINAL TORSION



DOPPLER USG



INTRAVAGINAL TORSION

- Bell-clapper deformity
  - High, narrow attachment of the testis within the tunica vaginalis
  - Testis can swing within the tunical space
- More common in pre-pubertal or pubertal male due to rapid growth of testicle
- Torsions are lateral to medial and may be 180-720 degrees
- Vascular compromise and ischemic changes in the testicle

YOU HAVE

6 – 8 HOURS

TO PREVENT

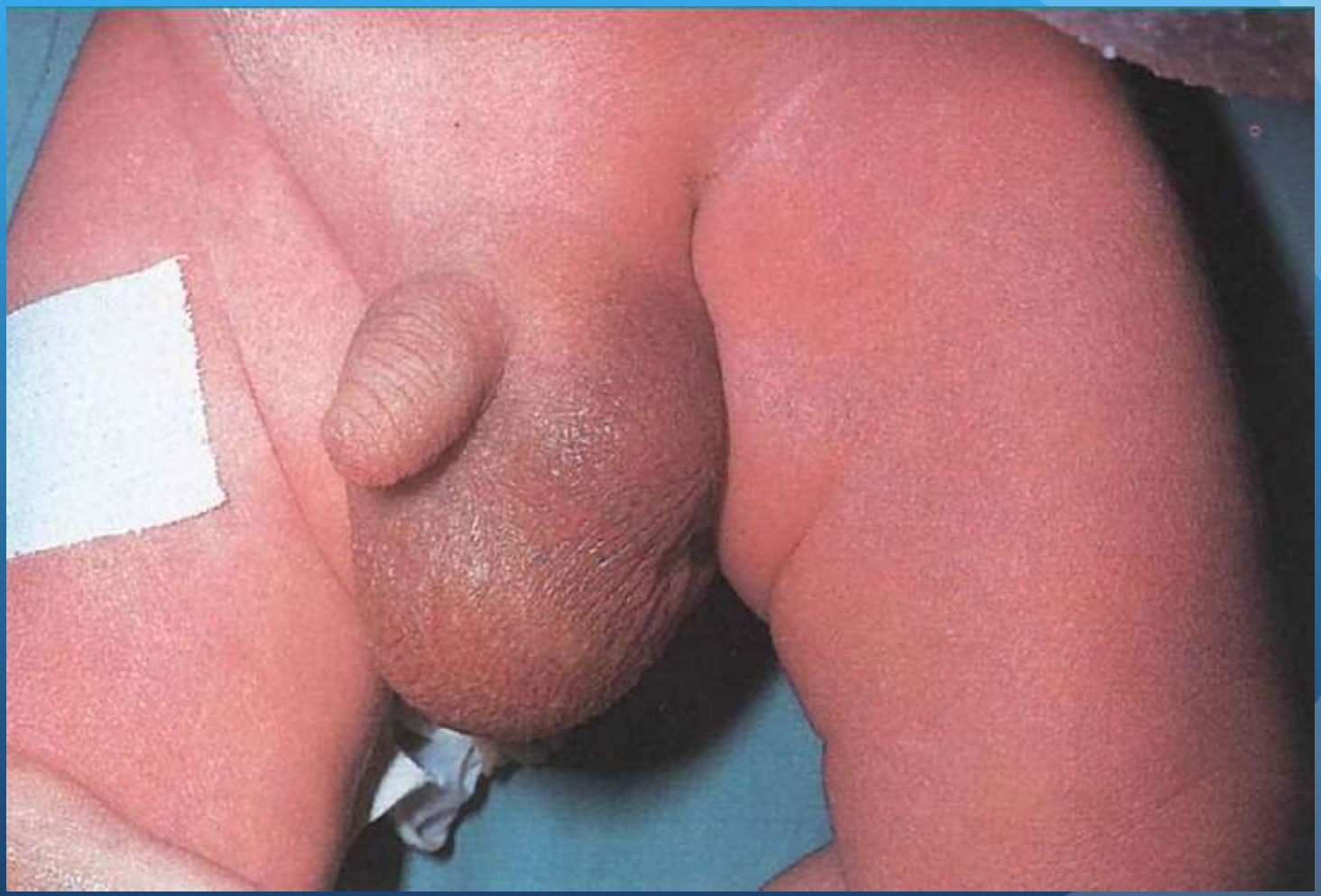
TESTICULAR LOSS!!

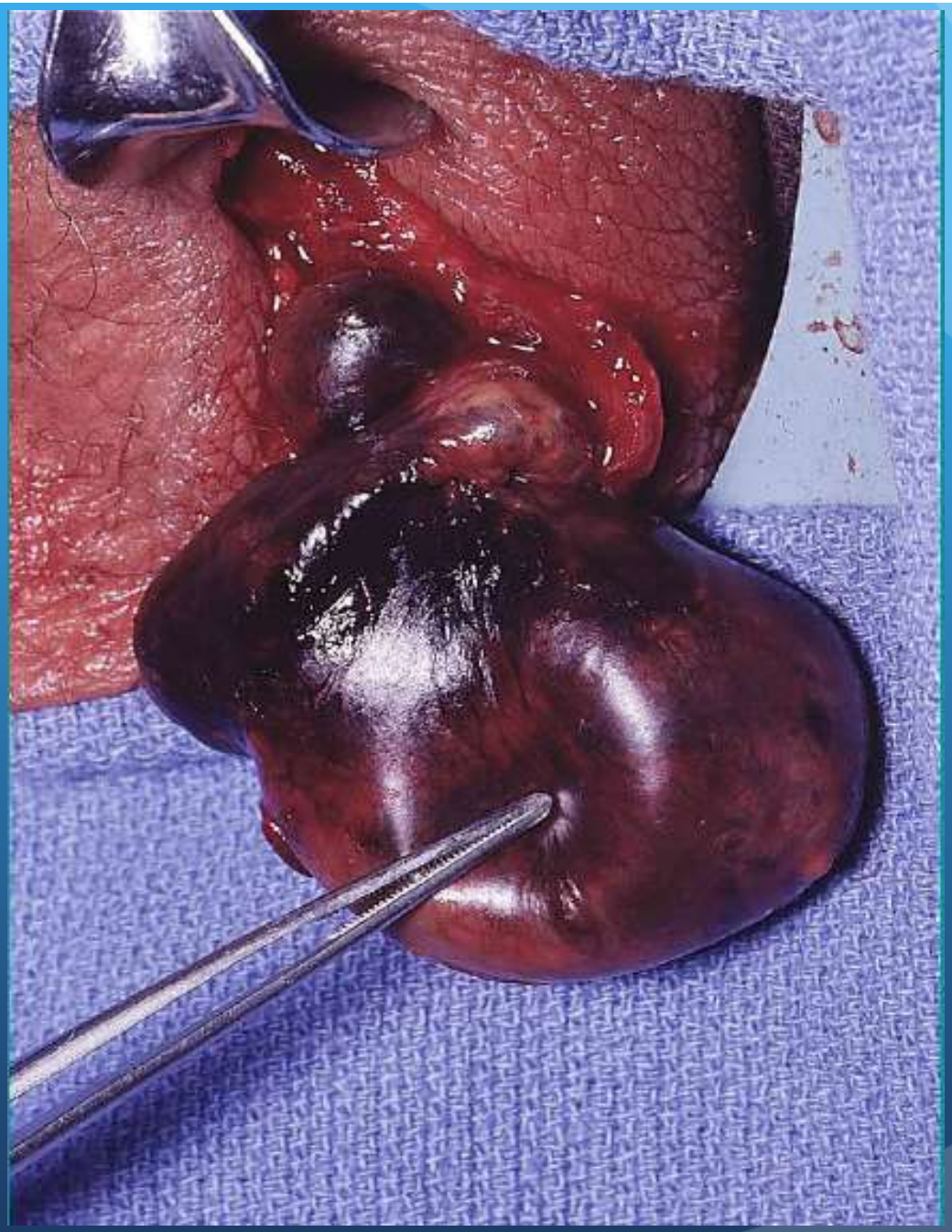
INTRAVAGINAL TORSION

- **SYMPTOMS:**
  - Intense, immediate pain
  - Pain, may or not be related to physical activity
  - Vomiting
  - Lower quadrant abdominal pain
  - Sometimes patient is awakened by pain

INTRAVAGINAL TORSION

- **SIGNS:**
  - Diffusely tender testicle
  - High-riding testis
  - Abnormal orientation of the testis with transverse lie in the scrotal sac
  - Anterior presentation of the epididymus
  - Absence of cremasteric reflex
  - Later presentation clouded by associated hydrocele and scrotal edema





INTRAVAGINAL TORSION

- **MANUAL DETORSION:**
  - "Opening the book approach"
  - Testis untwisted medially to laterally
  - May buy time if surgeon not immediately available
  - If successful, immediate relief of symptoms
  - Torsions can also occur in the opposite direction

INTRAVAGINAL TORSION

- **MANAGEMENT:**
  - Immediate exploration
  - Detorsion
    - if viable : bilateral orchidopexy
    - If not viable : ipsilateral orchiectomy, contralateral orchidopexy
  - Doppler ultrasound should not delay exploration if patient presents within 6 hour window of onset of symptoms
  - **Race against time!!**

INTERMITTENT TORSION

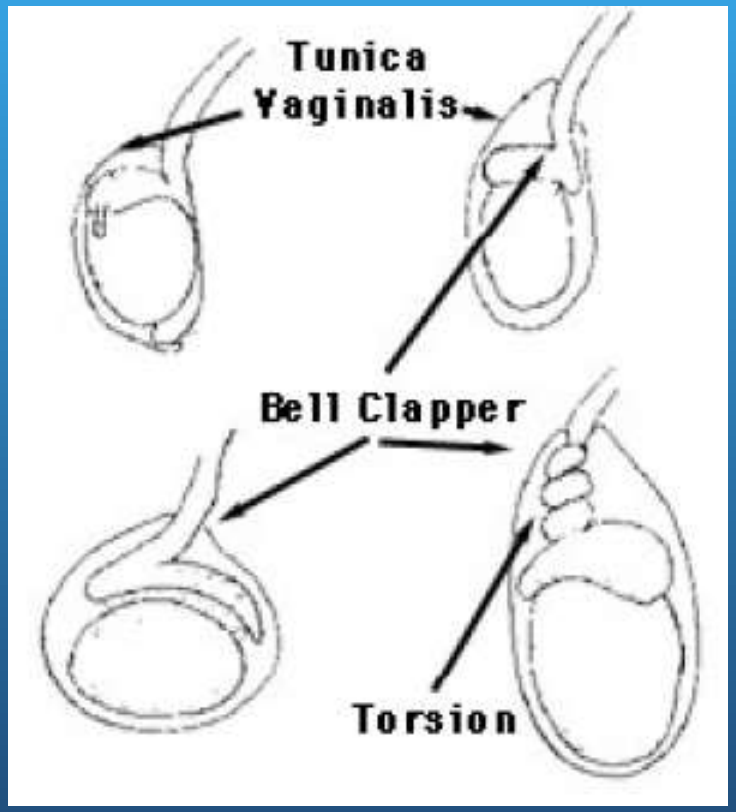
- Intermittent episodes of severe testicular pain
- Resolve spontaneously within a short time
- Mostly in young pubertal boys
- Physical findings are similar when wittnessed
- Management:
  - Elective surgical fixation as soon as possible
- Some patients may be experiencing orchalgia unrelated to torsion

TRAUMA

- Infrequent
- History of direct hit to scrotal area
- May range from normal exam to diffusely enlarged scrotum with echymoses and loss of anatomic landmarks
- Many patients presents with torsion after acute trauma
- Testicular rupture requires immediate exploration
- Hematomas are managed expectantly

DIAGNOSIS OF SELECTED CONDITIONS RESPONSIBLE FOR THE ACUTE SCROTUM

Condition	Onset of symptoms	Age	Tenderness	Urinalysis	Cremasteric reflex	Treatment
Testicular torsion	Acute	Early puberty	Diffuse	Negative	Negative	Surgical exploration
Appendiceal torsion	Sub acute	Prepubertal	Localized to upper pole	Negative	Positive	Bed rest and scrotal elevation
Epididymitis	Insidious	Adolescence	Epididymal	Positive or negative	Positive	Antibiotics


Tunica
Vaginalis
Bell Clapper
Torsion

Urosepsis

- Microbacteria from urogenital tract

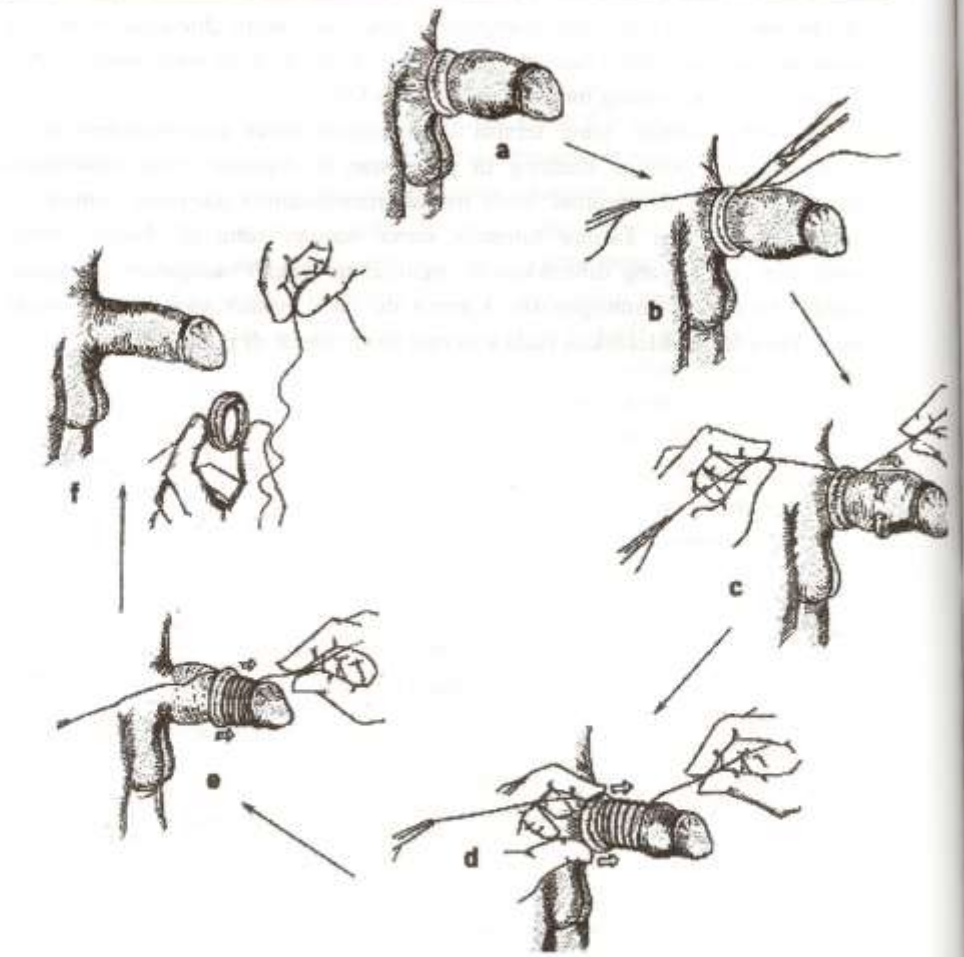
→ mortality (50-60)%

- Gram negatif
- Blood culture = urine culture
- Treatment
  - Terhadap infeksi dan sumber infeksi
  - Terhadap akibat infeksi/SIRS
  - Terhadap toksin/mediator yg dikeluarkan oleh bakteri

Trauma penis

- Non strangulasi
  - Fraktur penis
  - Amputasi penis
  - Hematom penis, karena trauma tumpul
- Strangulasi

Strangulasi penis



Gbr 6-7: Cara melepaskan logam yang melingkar pada penis, a. Cincin logam melingkar di pangkal penis, b. Seutas tali dimasukkan di antara penis dan cincin, c. Bagian tali yang berada di sebelah distal penis dilingkarkan pada batang penis sehingga d. diameter penis di sebelah distal cincin lebih kecil daripada diameter lumen cincin, e. Perlahan-lahan cincin dapat ditarik ke luar dengan tetap menambah lingkaran tali pada penis, f. Cincin dapat dikeluarkan dari penis.

Strangulation

- Torsio testis
- Parafimosis
- Priapismus

Torsio testis

- Commonest pubertas (12-20) yo

  ⇨ defferentiate with epididimitis akut.hernia skrotalis inkarserata, hidrokel terinfeksi, tumor testis, edema skrotum

Parafimosis

→The foreskin becomes trapped behind the glans penis, and cannot be reduces

Treatment

- Manual reposition → massage glans
- Dorsumsisi/circumcision

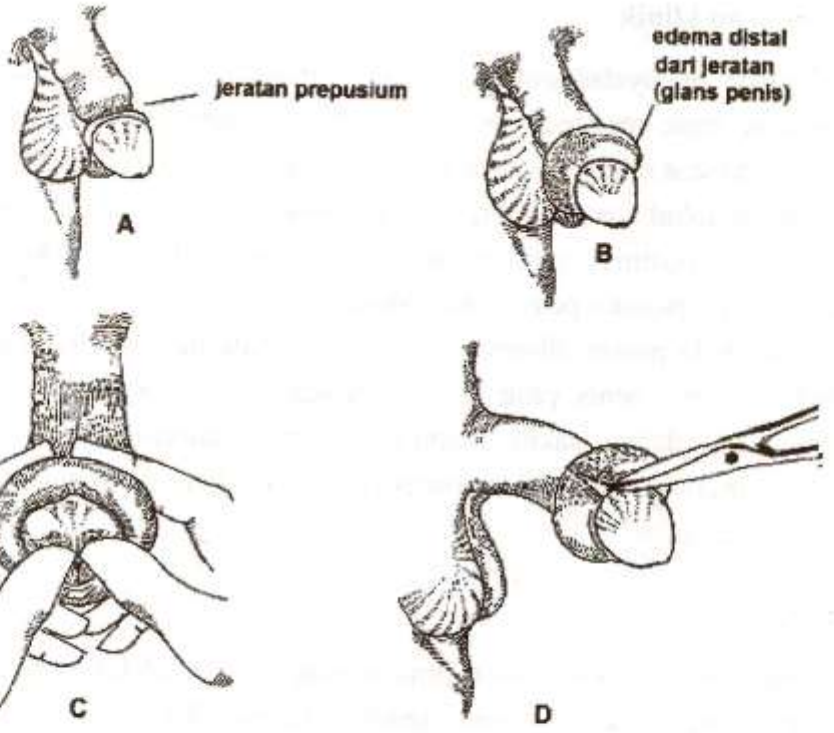
Priapismus

→Penile erection that persists beyond or is unrelated sexual stimulation→ Pain

Classified

- Ischemic (venous, low flow)
- Non ischemic (arterial, high flow)

Parafimosis and management



Gbr 8-1 : Parafimosis : A. Menimbulkan jeratan prepusium pada sulkus koronarius, B. Timbul edema, C. Reposisi manual, D. Dorsumsisi

Thank you for your attention