

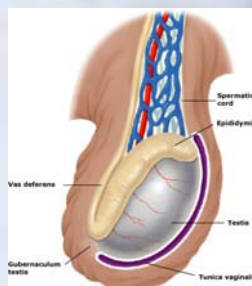
## PEDS ER Combine Meeting

Speaker R2李尚  
Supervisor Vs 王瑞芳  
Date 99/04/12

## Discussion

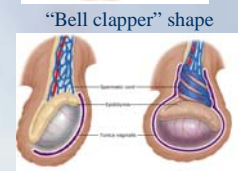
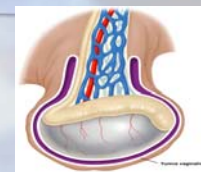
- Acute scrotal pain
  1. Testicular torsion
  2. Torsion of the appendix testis or appendix epididymis
  3. Epididymitis

## Normal Anatomy



## Testicular torsion

- Inadequate fixation of the testis to the tunica vaginalis
- Two peak incidences:
  1. neonatal period
  2. puberty
- Incidence 1/4000
- 12~18 yrs: 65%



## Clinical presentation

- Abrupt onset of severe testicular or scrotal pain
- Inguinal or lower abdominal pain
- 90% nausea and vomiting
- Awaken with scrotal pain in the middle of the night or in the morning
- Absent cremasteric reflex, <6months?
- Prehn sign is not a reliable

## Intermittent torsion

- Acute and intermittent sharp testicular pain and scrotal swelling, with rapid resolution and long intervals without symptoms.

## Diagnosis

- Clinically
- Radiologic evaluation :
  1. color Doppler ultrasound  
sensitivity 65~100%  
specificity 77~100%
  2. nuclear scan  
sensitivity 100%  
specificity 97%

## Management

- Surgical detorsion and fixation
- Orchiectomy if nonviable
- Typical rates of viability
  - 4~6 hours — 100% viability
  - >12 hours — 20% viability
  - >24 hours — 0% viability
- Fixation of the contralateral testis to prevent future torsion
- Manual detorsion, before scrotal swelling

### Testicular torsion

#### Indications for surgery:

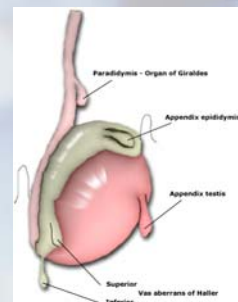
- Suggestive history/physical
- Similar episodes >2 weeks ago
- Flow by perfusion study
- Nondiagnostic perfusion study

#### Treatment:

- Definitive: surgery
- Temporizing: trial of manual detorsion

## Torsion of the appendix testis or appendix epididymis

- Small vestigial structure on the anterosuperior aspect of the testis
- An embryologic remnant of the Müllerian duct
- 0.3 cm
- 7~12 yrs boys
- Mild to severe pain



## Clinical presentation

- Sudden onset, like the pain of testicular torsion
- Nontender testicle and a tender localized mass that is palpable, usually at the superior or inferior pole
- Blood flow to the affected testis is normal or increased



"Blue dot sign"

## Diagnosis

- Clinically
- Doppler ultrasound or nuclear scan
- Color Doppler reveals normal blood flow or increase flow due to inflammation
- Radionuclide imaging : "hot dot" sign

## Management

- Supportive, analgesics, bed rest, and scrotal support
- Resolve in 5 to 10 days
- Surgery :  
Persistent pain  
Contralateral hemiscrotum need not be explored

### Torsion of appendage

#### Admission criteria:

Doubt diagnosis (study)

Severe pain

Pain refractory to trial of analgesics and conservative management

#### Treatment:

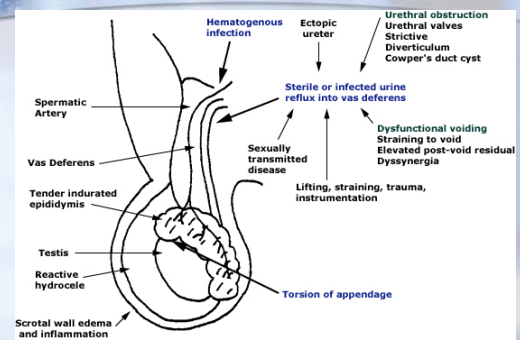
Analgesics

Rest

## Epididymitis

- Inflammation of the epididymis
- Often caused by infections
- Sexually active males : N. gonorrhea, E. coli, and viruses
- Noninfectious epididymitis, reflux of sterile urine through the ejaculatory ducts, "chemical" inflammation
- Prepubertal boys : structural anomalies of the urinary tract

## Etiology of epididymitis



## Clinical presentation

- Acute or subacute onset of pain and swelling isolated to the epididymis
- Testis : normal vertical lie
- Normal cremasteric reflex
- Prehn sign (not a reliable marker)
- Leukocytosis and pyuria?
- Only 15% of those with epididymitis had a positive urinalysis

## Diagnosis

- Clinically
- Doppler ultrasonography or nuclear scan : increased blood flow
- Gram-stained smear and culture
- Nucleic acid amplification tests for N. gonorrhea and C. trachomatis
- Urine culture
- Syphilis and HIV testing

## Management

- antibiotics, analgesics, scrotal support, elevation, and bed rest
- Chlamydia or gonorrhea → ceftriaxone 250mg im st + doxycycline 100mg po bid \* 10days
- Others than gonorrhea → Ofloxacin 300mg po bid \* 10 days or cravit 500mg po qd \* 10 days

### Acute epididymitis

#### Admission criteria:

Doubt diagnosis (surgery)

Severe pain

Immunocompromised

Not tolerating PO noncompliant

#### Treatment:

##### Children:

If pyuria >3 WBC/hpf or positive culture, or if underlying GU abnormality:  
Antibiotic course against coliforms\*

If no pyuria and negative culture:

Antibiotics not required

Extensive evaluation not required

##### Sexually active adolescents:

Heterosexual: empiric antibiotics (chlamydia, GC)\*

Homosexual: empiric antibiotics (chlamydia, GC and coliforms)\*

## Other Causes

- Trauma
- Incarcerated inguinal hernia
- Henoch-Schönlein purpura
- Orchitis
- Referred pain
- Nonspecific scrotal pain

	Testicular torsion	Torsion of appendage	Acute epididymitis
<b>Historical features</b>			
Pain: occurrence	Peri- and puberty	Peripubertal	<1 year and peripubertal
Onset of pain	Usually sudden	Usually sudden	Usually gradual
Duration of pain	Usually <12 hours	Usually <12 hours	Usually >12 hours
Previous episodes	Typical	Unusual	Recurrent episodes
Nausea and vomiting	Common	Uncommon	Uncommon
Fever	Unusual	Unusual	Common
History of trauma	Occasional	Unusual	Unusual
Disuria or discharge	Rare	Rare	Common
<b>Physical findings</b>			
Suggestive findings	Self-diagnose	Palpable scrotal "blue dot"	None
Consistent reflex	Usually absent	Usually present	Usually present
Tenderness	Testicle initially, then diffuse	Appendage initially, then testis	Epididymis initially, then diffuse
Scrotal erythema or edema	Common >12 hours	Common >12 hours	Common >12 hours
<b>Subsidiary tests</b>			
Pyuria	Unusual	Unusual	Common
Positive urine or culture	No	No	Often
Leukocytosis	Common	Uncommon	Common
<b>Prognostic studies</b>			
Color Doppler	Decreased	Normal or increased	Normal or increased
Doppler side	Decreased	Normal or increased	Normal or increased

TABLE

The patients all had testicular torsion, but how helpful were the exam findings?

PHYSICAL FINDING	SENSITIVITY (95% CI)	SPECIFICITY (95% CI)	LR+ (95% CI)	LR- (95% CI)
Absent cremasteric reflex	96% (73%-100%)	88% (79%-93%)	7.9 (4.3-14.5)	0.04 (0.003-0.62)
Tender testicle	96% (73%-100%)	38% (28%-49%)	1.6 (1.3-1.9)	0.09 (0.006-1.46)
Abnormal testicular lie	46% (24%-70%)	99% (94%-100%)	72 (4-1215)	0.54 (0.33-0.88)
Tender epididymitis	23% (1%-50%)	20% (12%-30%)	0.29 (0.11-0.78)	3.95 (2.29-6.8)
Isolated tenderness (superior pole of testis)	4% (0%-27%)	83% (73%-90%)	0.21 (0.01-3.28)	1.17 (1.01-1.35)

■ Thanks