RACY 403 Case Presentation
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April 2021

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Focused patient history and workup

• 11 y.o. M with no significant PMHx presents with 2 days of gradually worsening left testicular pain and swelling. He’s had nausea and 1 episode of vomiting. No hx of trauma. Exam notable for high-riding left testicle with horizontal lie and loss of cremasteric reflex.

• DDx for non-traumatic acute testicular pain:
  testicular torsion, epididymitis, orchitis, incarcerated inguinal hernia, torsion of appendix testis

• Testicular torsion is a **medical emergency**! Diagnose quickly and call urology.
List of imaging studies

- Color Doppler ultrasound of the scrotum
- Nuclear medicine scans no longer used due to relatively long scan times
Imaging studies from PACS

Long View

Right Testicle: Uniform echotexture

Left Testicle: Heterogeneous echotexture (late finding)
Imaging studies from PACS

Transverse View

Right Testicle

Left Testicle

Complex left hydrocele with septations
Imaging studies from PACS

Transverse View

Right Testicle
Normal doppler color signal

Left Testicle
Absent doppler color signal
Imaging studies from PACS

Epididymal Size

Right Testicle

Right epididymis: 5.5 mm

Left Testicle

Left epididymis: 8.0 mm
Separate patient - example of the “whirlpool sign”

Left Spermatic Cord

Whirlpool Sign (coiled spermatic cord)
Patient treatment and outcome

• Immediately taken to OR for bilateral scrotal exploration
• Left spermatic cord had a 540 degree distal torsion
• Left testicle dark/dusky with no improvement after detorsion

• Left orchiectomy (L testicle surgically removed)
• Right orchiopexy (R testicle anchored to scrotal wall)

• Pt tolerated the procedure well and had no post-op complications
Imaging discussion

- Testicular torsion can be diagnosed clinically – call urology immediately if definitive clinical signs are present:
  - acute severe testicular pain, N/V, absent cremasteric reflex, testicular tenderness/swelling, high-riding/transverse testicle position

- Color Doppler scrotal ultrasound obtained if clinical findings are not definitive
  - Sensitivity: 69 – 100%
  - Specificity: 77 – 100%
Imaging discussion

• Sonographic findings of testicular torsion on Doppler ultrasound:
  • Decreased/absent testicular perfusion
  • Twisting of the spermatic cord ("whirlpool sign" – most specific finding)
  • Increased testicular and epididymal size
  • Heterogeneous echotexture (late finding that indicates necrosis)
  • Reactive hydrocele
  • Thickening of scrotal skin with hyperemia
  • Peripheral testicular neovascularization (after several days)

• Epididymitis can be a close mimic. Torsion excluded if all abnormalities are confined to the epididymis
Management discussion

• Early diagnosis and detorsion is essential for salvaging a viable testicle

• Approximate viability rates based on the time to detorsion:
  • 4 – 6 hours: 97 to 100% viability
  • > 12 hours: 20 to 61% viability
  • > 24 hours: 0 to 24%

• Never assume non-viability based on duration as there may be only intermittent or partial torsion

• Manual detorsion can be attempted if surgical care is not quickly available
1. Is imaging required to diagnose testicular torsion?
   No. Testicular torsion can be diagnosed clinically.

2. If necessary, what is the best imaging modality to diagnose testicular torsion?
   Color Doppler ultrasound of the scrotum.

3. What is the most important next step once testicular torsion is identified?
   Immediate urologic consultation for surgical exploration and detorsion.
References


