EM CASE OF THE WEEK.
BROWARD HEALTH MEDICAL CENTER
DEPARTMENT OF EMERGENCY MEDICINE

BROWARD HEALTH
Care Warriors

Author: Esteban Rodriguez OMS-IV | Editor: Amanda Hunter, D.O.

Vol 6 | Issue 2

Testicular Infarction

A 35-year-old male with PMHx of COPD, DMT2, HTN, hyperthyroidism, and schizophrenia presents to the ED with left testicular pain and swelling for 2 weeks that worsened over the last 4 days. The pain while in the ED is classified as a mild constant sharp 4/10 pain and the swelling has been progressive since onset. Patient denies any associated symptoms such as fevers, N/V, dysuria, hematuria, urethral discharge or abdominal pain. Patient states his last unprotected sexual encounter was a 1 year ago and he has no history of STIs. On physical exam, the left testicle is erythematous, swollen, and moderately tender to palpation. In addition, an area of fluctuance located on the lateral aspect of the scrotum was appreciated. There is no illumination of scrotum, and there is absent cremesteric reflex on left side. Lifting the scrotum does not relieve the pain. Possible DDx includes testicular torsion, testicular abscess, testicular infarction, testicular necrosis, acute epididymo-orchitis, varicocele, hydrocele. Which of the following is the most appropriate initial management for this patient's condition?

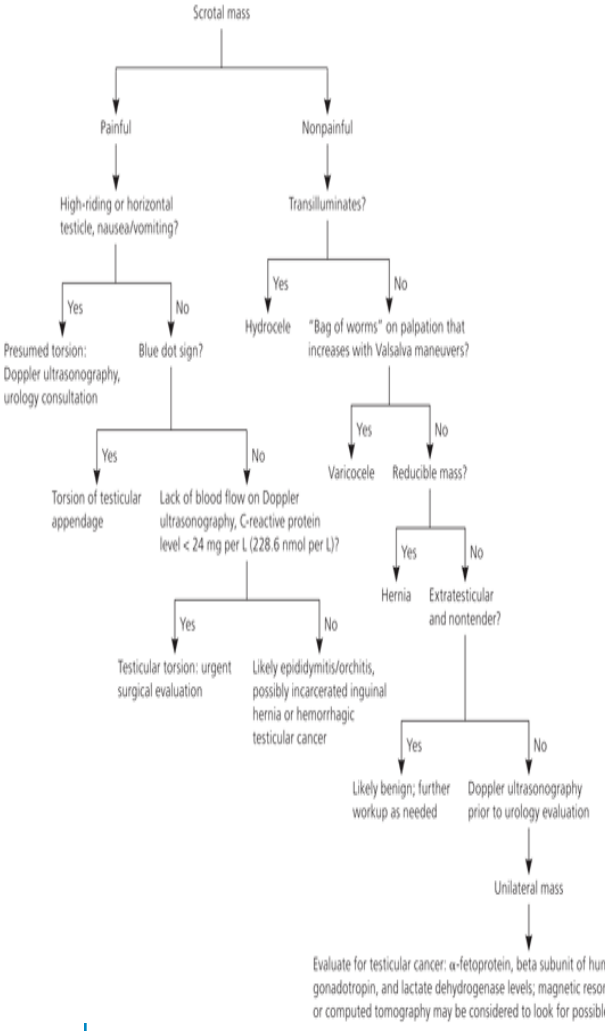
A. antiviral medications

B. Emergency surgery and bilateral orchiopexy

C. Testicular US and antibiotics

D. Trans-scrotal biopsy

E. Unilateral testicular resection



The figure above describes the diagnostic approach to a scrotal mass.

EM Case of the Week is a weekly "pop quiz" for ED staff.

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

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Department of Emergency Medicine
1625 SE 3rd Avenue
Fort Lauderdale, FL 33316

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The correct answer is C. sonogram (testicular US) and antibiotics (piperacillin/tazobactam).

Doppler Ultrasound is the first-line imaging modality used in patients with acute scrotal pathologies. In addition, broad spectrum antibiotics are started when an infectious etiology is considered.

In the case presentation described above, the patient presented with a moderately elevated WBC count; however had no fever. Blood tests were WNL and urine culture revealed no bacterial growth. On imaging, the testicular ultrasound revealed absent blood flow to the left testicle. Ultimately, patient underwent incision and drainage of left abscess as well as a left orchiectomy by urologist.

When no detectable flow is seen in the testicle, the presumptive diagnosis of testicular torsion is made. However since our patient presented with atypical symptoms of testicular torsion, another etiology must be considered. When it comes to testicular infarction, different etiologies include incarcerated inguinal hernias, complications following hernia repair, thrombotic phenomena, vasculitis, and complicated epididymo-orchitis. All of which can cause decreased blood flow ultimately resulting in testicular infarction.

In the case presentation above, prolonged untreated epididymo-orchitis for over 2 weeks is a suspected cause that could have led to testicular infarction.

*Signs and symptoms of complicated epididymo-orchitis

-Gradual onset of scrotal pain and swelling, usually unilateral, often developing over several days (as opposed to hours fro testicular torsion).
-dysuria, urinary frequency, or urgency
-fever and chills (in 25% of adults but in up to 71% of children with the condition)
-usually, no nausea and vomiting (in contrast to testicular torsion)
-urethral discharge preceding the onset (in some cases)

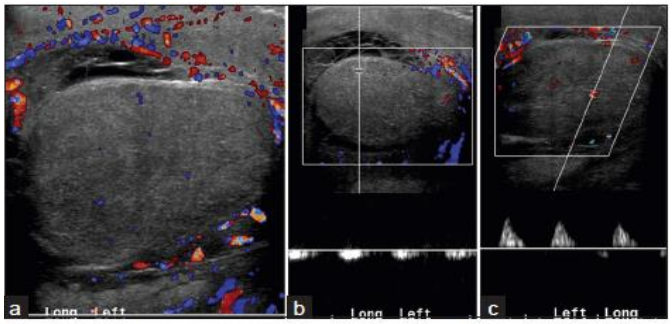

Figure 9: A 22-year-old male with epididymo-orchitis on antibiotics. (a) Color flow Doppler demonstrates an enlarged, edematous testis with decreased blood flow. (b) Pardus tarvus waveform and (c) monophasic waveform in the same testis confirm high resistance to arterial inflow secondary to significant testicular edema.

Discussion

Epididymo-orchitis is defined as an inflammation of the epididymis and/or testicle. Bacterial epididymo-orchitis tends to be caused by either urinary tract pathogens or by sexually transmitted pathogen.

Complicated epididymo-orchitis can result in testicular infarction. Infection of the epididymitis or testicle can result in marked swelling and edema of the spermatic cord that may impede testicular blood supply, in the absence of testicular torsion.

In the setting of infarction complicating epididymo-orchitis, the affected testicle may develop ischemic orchitis, localized abscess, or diffuse gangrenous epididymo-orchitis. If left untreated, complicated epididymo-orchitis can result in an atrophic and infarcted testis. This condition must be differentiated from torsion since the later requires orchiopexy.

Differentiation between epididymo-orchitis and testicular torsion can sometimes be difficult. However, referral to the urologist when testicular torsion is suspected should not be delayed by an ultrasound examination.

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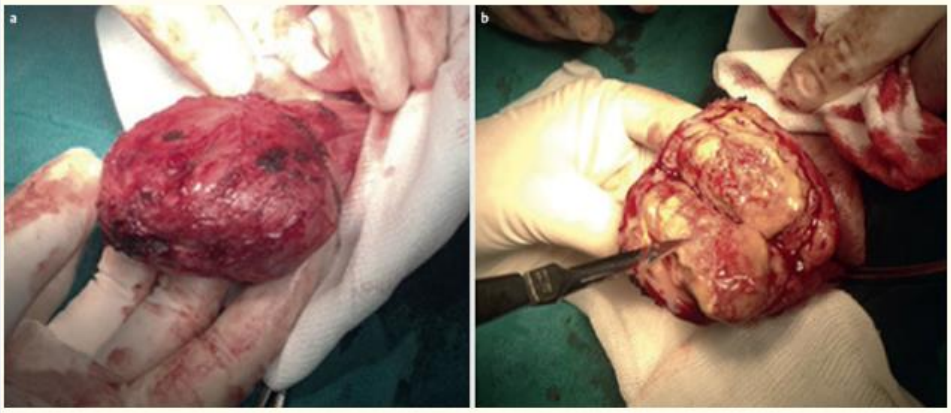

Fig. 3

Intraoperatively the left testicle appears obviously damaged with **a** areas of necrosis on the surface and **b** areas of necrosis on the cut section as depicted by the scalpel tip.

Management

Uncomplicated acute epididymitis-orchitis is treated with antibiotic therapy, analgesics for pain control, and supportive care such as scrotal elevation and support, application of an ice pack, and in some cases spermatic cord block.

In sexually active males 14-35 years of age, a single intramuscular dose of ceftriaxone with 14 days of oral doxycycline is the recommended treatment.

In men older than 35 years, epididymitis-orchitis is usually caused by enteric bacteria in the ejaculatory ducts caused by reflux of urine secondary to bladder outlet obstruction. In such cases, levofloxacin is used for treatment.

If treatment is delayed, complications can arise such as: scrotal abscess, testicular infarction, fertility problems, testicular atrophy, and cutaneous fistulization from rupture of an abscess through the tunica vaginalis. In these cases, I and D and orchiectomy are performed.

Take Home Points

- Epidydimo-orchitis is the most common cause of acute scrotum in men.
- In a study of 237 patients with acute epididymitis, a causative pathogen was identified in 132 antibiotic naïve patients and 44 pretreated patients. The primary pathogen was as e. coli. Sexually transmitted infections were present in 34 cases.
- If testicular torsion is suspected, urgent surgery within 4-6 hours to prevent testicular infarction and consultation of a urologist should not be delayed.

ABOUT THE AUTHOR

This month's case was written by Esteban Rodriguez. Esteban is a 4th year medical student from NSU-COM. He did his emergency medicine rotation at BHMC in August 2019.

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