

## Chapter 3

---

### EPIDIDYMITIS

Epididymal infection is one of several diagnoses to consider when a man presents with unilateral scrotal pain and swelling. In approximately 10% of cases, trauma is the cause and, as an etiology, can usually be eliminated by history. In patients with no history of scrotal trauma, important etiologic considerations include testicular torsion, epididymitis, tumor, and tuberculosis (the latter two diagnoses typically having more indolent presentations). If the patient suspects he has a sexually transmitted disease, infection should be carefully considered as the cause of his symptoms.

#### ETIOLOGY

The two principle causes of epididymitis include infection with sexually transmitted pathogens such as *Chlamydia trachomatis* or *Neisseria gonorrhoeae* (most common in sexually active men <35 years old), and infection with Gram-negative bacilli such as *E. coli* or pseudomonas (most common in men >35 years of age). Of STD-related cases, 65% to 75% are due to *C. trachomatis* (CT) and the remainder to *N. gonorrhoeae* (GC). Both of these organisms are present in some patients, and enteric pathogens such as *E. coli* are sexually transmitted in some men who have sex with men (MSM).

#### DIAGNOSIS

##### History and examination

The approach to the diagnosis of epididymitis in patients with unilateral scrotal pain and swelling begins with ruling out trauma by history and examination.

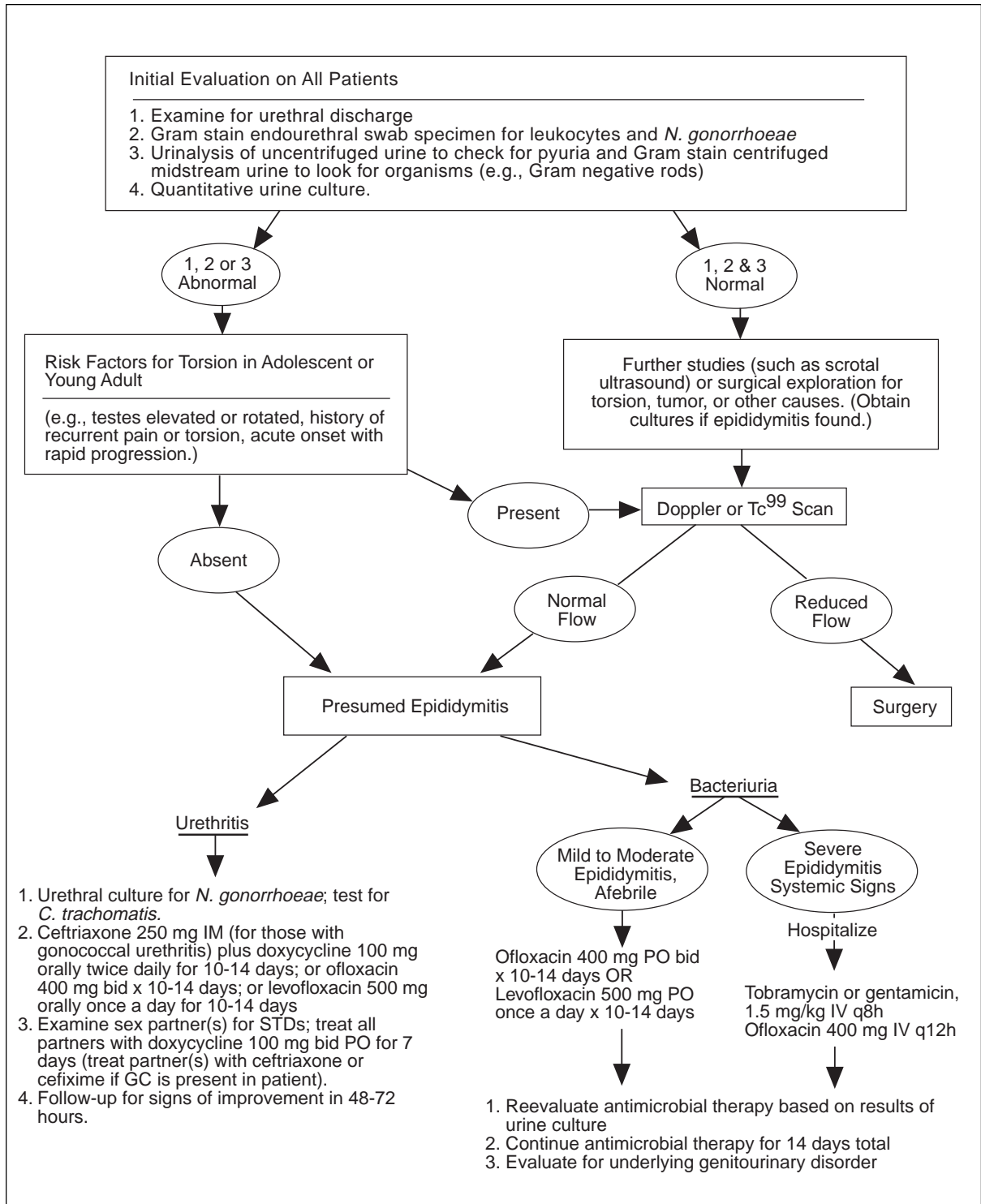
If torsion is strongly suspected, based primarily upon:

- sudden onset,
- excruciating pain,
- age under 20,
- testicular elevation,

immediately obtain urologic consultation and have radionuclide or Doppler flow studies done to determine whether surgery is necessary.

If torsion is not strongly suspected, epididymitis becomes the most likely diagnosis (see Figure 3-1) based on:

- less than 35 years of age,
- history of recent urethritis or
- demonstrable urethritis upon examination,
- no history of underlying genitourinary pathology of any other sort (prostatitis, recent catheterization, or other urologic procedure),
- and signs of epididymal or testicular inflammation (tenderness, swelling or increased warmth).



Adapted with permission by McGraw-Hill Book Company from Wilson, et al., *Harrison's Principles of Internal Medicine*, 11th edition; copyright 1987 by McGraw-Hill.

**Figure 3-1**  
Algorithm for the management of acute unilateral intrascrotal pain.

Men who have epididymitis related to *E. coli* or pseudomonas infection usually are

- older than 35 years of age,
- have some form of underlying genitourinary pathology,
- have a history of recent urological instrumentation,
- do not have a history of antecedent urethritis, or are
- men who practice insertive rectal intercourse.

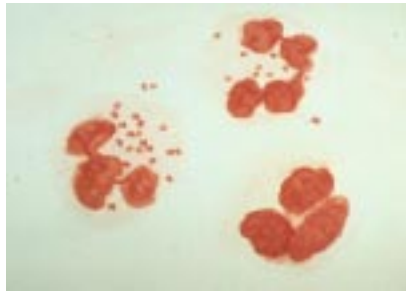
## LABORATORY

Initially, separate patients suspected of having sexually transmitted pathogens from those suspected of having urinary tract infections by history, urethral Gram stain, and urinalysis.

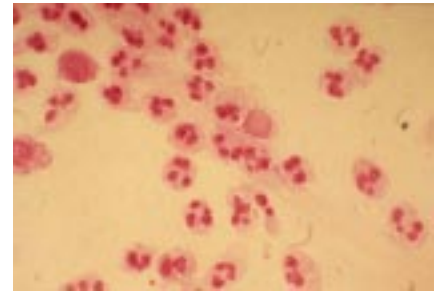
Gonococcal and nongonococcal infection can be differentiated on the basis of the following:

- urethral Gram stain
- urethral culture for GC
- test for CT (preferably with a more sensitive test such as nucleic acid amplification test (NAAT))
- a midstream urine specimen should be cultured to look for enteric pathogens.

In patients strongly suspected of having epididymitis but with negative urinary and urethral cultures, the etiologic agent can sometimes be determined by epididymal aspiration and culture of the aspirated fluid. This procedure is impractical and unnecessary in most cases, but should be considered when the patient's therapeutic response is suboptimal or the diagnosis remains unclear.



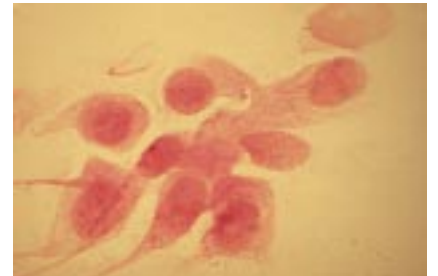
Intacellular Gram-negative diplococci (GND) in urethral Gram stain [3]



Urethral Gram stain with 5 PMNs per high power field (nongonococcal urethritis) [4]



Lesion of disseminated gonococcal infection [7]



Normal urethral cells on Gram stain [6]



Nongonococcal urethritis (mucoid discharge) [1]

## TREATMENT

*For a more detailed discussion of these regimens and other treatment considerations, please refer to the CDC STD Treatment Guidelines at <http://www.cdc.gov/std/treatment/>.*

Epididymitis-related symptoms range from mild to severe (fever, nausea, vomiting, abdominal and severe scrotal pain, marked epididymal and testicular swelling). Patients with severe epididymitis should be hospitalized for initial management. The remainder can be managed as outpatients. Bed rest and scrotal elevation are recommended for all patients with acute epididymitis. Patients with pyuria and bacteriuria on urinalysis should be treated with appropriate antimicrobials as follows:

### **Recommended regimen for epididymitis most likely caused by gonococcal chlamydial infection.**

Any of the following:

- Ceftriaxone 250 mg IM in a single dose, plus doxycycline 100 mg orally twice a day for 10 days.
- Ofloxacin 300 mg orally twice a day for 10 days
- Levofloxacin 500 mg orally once daily for 10 days\*

\* For epididymitis most likely caused by enteric organisms, for patients allergic to cephalosporins and or tetracyclines, or for epididymitis in patients >35 years old.

## FOLLOW-UP

The frequency of follow-up should be individualized. Most patients should be reexamined 2 to 4 days after starting therapy and, again, 5 to 7 days after completing treatment.

## MANAGEMENT OF SEX PARTNERS

Chlamydial or gonococcal epididymitis (or presumed sexually-transmitted epididymitis in CT- and GC-negative patients): Manage sex partners as for NGU or gonorrhea; typically with 7 days of doxycycline (plus cefixime for GC) respectively.

Bacterial epididymitis: None.

## SEQUELAE

Local complications include abscess formation and infarction of the testicle. Infertility has occasionally been observed, mainly in cases with acute bilateral epididymitis. The risk of infertility after unilateral epididymitis has not been established but appears to be low.