EPIDIDYMITIS

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Overview

Epididymitis is the most common cause of scrotal pain resulting from inflammation of the epididymis. The most common causes in young men are Chlamydia trachomatis (CT) and Neisseria gonorrhoeae (GC) infections. It must be differentiated from testicular torsion, which requires immediate surgical intervention.

Etiology

Infectious

- <35 years old
  - CT and GC
- >35 years old
  - E.coli and other coliforms, Pseudomonas spp (but can still consider CT and GC)
- Engage in anal intercourse (any age)
  - Coliforms

Less common organisms: Ureaplasma spp, Brucella spp, Mycobacterium tuberculosis

Non-infectious

- Causes: trauma, autoimmune, vasculitis, reflux of urine into epididymitis, certain medications (ex. Amiodarone); usually no etiology found
- Generally a chronic condition with less inflammation and pain than with infective causes
- Diagnosis of exclusion

Diagnostic Considerations

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>History</th>
<th>Physical</th>
<th>Investigations</th>
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<tbody>
<tr>
<td><strong>ACUTE EPIDIDYMITIS (&lt;6 weeks)</strong></td>
<td>- Gradual onset of severe scrotal pain and swelling &lt;br&gt;- usually unilateral but may radiate to adjacent testes and lower abdomen &lt;br&gt;- often with associated fever, rigors, and symptoms of UTI (freq, urgency, dysuria) &lt;br&gt;- May have urethral discharge (purulent)</td>
<td>- Scrotal erythema and edema (50% of cases) &lt;br&gt;- Epididymal tenderness &lt;br&gt;- Normal cremasteric reflex &lt;br&gt;- Relief of pain with elevation of testes (positive Phren’s sign) &lt;br&gt;- Evaluate for epididymal-orchitis and for epididymal-prostatitis</td>
<td>- Urine (R+M, C+S, NAAT for GC/CT) &lt;br&gt;- Urethral swab if urethral discharge (for culture and nucleic acid amplification (NAAT) for GC/CT) &lt;br&gt;- US usually not necessary. Would see enlarged, thickened epididymis with increased Doppler blood flow (US)</td>
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<td><strong>CHRONIC EPIDIDYMITIS (&gt;6 weeks)</strong></td>
<td>- Gradual onset of scrotal pain usually without swelling &lt;br&gt;- Dysuria less likely &lt;br&gt;- Usually young healthy males &lt;br&gt;- Risk factors include sexual activity, physical exertion, motorcycle/bicycle riding, prolonged sitting</td>
<td>- Normal cremasteric reflex and positive Phren’s sign</td>
<td>- For causes that may be infectious, should be treated the same as for acute epididymitis</td>
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<tr>
<td>TESTICULAR TORSION</td>
<td>TORSION OF APPENDIX TESTES</td>
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<tr>
<td>- Severe, acute onset scrotal pain</td>
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<td>- Most common cause of acute scrotal pathology in childhood (7-14 years old)</td>
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<td>- Rare in adults</td>
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<td>- More gradual onset than testicular torsion</td>
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<td>- Pain on elevation of testes</td>
<td>- Reactive hydrocele usually present which transilluminates</td>
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<td>- Abnormal cremasteric reflex</td>
<td>- Pain localized to appendix testes (anterosuperior testis)</td>
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<td>- High-riding and transversely oriented testes</td>
<td>Scrotal wall may have “blue dot” sign, from infarction of appendix testes</td>
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<td>- Decreased blood flow to testes on Doppler (US)</td>
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<td>- Surgical exploration in equivocal cases</td>
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<td>- Decreased echogenicity over torsed appendix testes on US</td>
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<td>- Colour Doppler reveals normal flow with possible increase on affected side because of inflammation</td>
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**Also consider** Orchitis (if not vaccinated for mumps); Testicular Cancer (look for mass)

**Management**

- Patients presenting with severe epididymitis should be evaluated for surgical intervention
- Septic patients may require hospitalization for IV hydration and parenteral antibiotics
- Less severe cases treated as outpatients with oral antibiotics, ice, and scrotal elevation
- Duration of therapy is 10-14 days unless otherwise indicated

**Infectious**

- 35 years old or practice anal intercourse – 10 day course of:
  - Ofloxacin 300mg BID
  - Ciprofloxacin 500mg BID
  - Levofloxacin 500mg once daily
- ≤35 years old or multiple sex partners:
  - First Line: [Ceftriaxone 250-500mg IM OR Cefixime 800mg PO] single dose PLUS Doxycycline 100mg BID PO for 10 days
  - Second Line: [Ciprofloxacin 500mg single dose (not approved for children) OR Levofloxacin 500mg single dose (not approved for children <18 years) OR Ceftriaxone IM 250-500mg single dose] PLUS [Azithromycin 1g single dose OR doxycycline 100mg BID x 10 days]

  - If no improvement noted with antibiotics within 2-3 days, other causes of pain and urology referral should be considered
  - Partner treatment required in confirmed CT or GC cases with avoidance of intercourse for 7 days post-treatment
  - Anti-inflammatories may be indicated, scrotal elevation, limiting physical activity, and use of cold packs are useful adjuncts.

**Non-infectious**

- Treated conservatively with rest from athletic activities, scrotal elevation and NSAIDs

**Bottom Line**

Epididymitis is a common urological diagnosis in which treatment depends on the characteristics of the patient. It is important to identify the possibility of a urological emergency, like testicular torsion, that requires prompt surgical attention.

References can be found online at [http://www.dfcm.utoronto.ca/programs/postgraduateprograme/One_Pager_Project_References.htm](http://www.dfcm.utoronto.ca/programs/postgraduateprograme/One_Pager_Project_References.htm)