Scrotal and testicular trauma

Etiology

- **Blunt trauma:** the most common type of trauma. It is usually the result of blows to the scrotum during contact sports or violent assaults. 50 kg of blunt force is generally required before rupturing the testicular tunica albuginea (50% of all cases).
- **Penetrating trauma:** rare, generally the result of assault, stab injuries, or fire. This type of trauma may only affect the skin or can damage the testicle.
- **Burns:** require careful evaluation to determine the extent of damage to the testes.

Clinical symptoms

- Edema and scrotal ecchymosis. If the testicular wall remains intact, the hematoma is contained. In contrast, rupture of the wall causes a large scrotal hematoma.
- Non-palpable or dislocated testis:
  - Subcutaneous dislocation: epifascial displacement of the testicle.
  - Internal dislocation: in the superficial inguinal ring, inguinal canal, or abdominal cavity.
- Intense pain upon palpation of testis. Occasionally with nausea, vomiting, or even fainting.

Diagnosis

- **History of trauma:** in cases where the magnitude of trauma and observed injuries do not seem to correlate, the possibility of testicular tumors must first be ruled out.
- **Scrotal examination:** damage to the testes, epididymis, and cord must be assessed.
- **Scrotal ultrasound:** to identify any testicular rupture and its extent. The homogeneity of the testicular pattern is lost in cases of hematocoele (sonolucent area in the peritesticular fluid).
- **VCUG:** indicated if there is hematuria, to rule out urethral or bladder lesions.
- **Surgical exploration:** sometimes necessary to determine the severity of injuries or in patients who do not allow an adequate examination.
- **Differential diagnosis:** with torsion of the testes or appendix, tumors, epididymo-orchitis, bruising of the spermatic cord, and reactive hydrocele.

Treatment

- **Indications for surgery:** penetrating trauma, rupture of the tunica albuginea, or presence of a large hematocoele (more than 3 times the size of the contralateral testis). Surgery may also be indicated if there is doubt as to whether the tunica albuginea has ruptured. In cases of large hematomas without testicular rupture, early surgery helps avoid more orchiectomies than delaying surgery.
- **Objectives:** conservation of viable testicle, prevention of infection, control of bleeding.
- **Technique:** transverse scrotal incision on the affected side. Drainage of the hematocoele and reparation of the tunica albuginea and testicular parenchyma with debridement of nonviable tissue. Relocation of testis and orchiopexy in cases of dislocation. Orchiectomy in cases of massive outburst. Penrose drainage. Closing of the scrotal wall.
- **In penetrating trauma:** prophylaxis with Amoxicillin/clavulanate; tetanus vaccine if >5 years has elapsed since administration of last dose (passive with Toxoid and active with Immunoglobulin 250 IU). In highly contaminated wounds, (bites, going, etc.), Vancomycin and Metronidazole are added. In animal bites, the need for rabies vaccine should be assessed.

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Brand name®</th>
<th>Dose</th>
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<tbody>
<tr>
<td>Amoxicillin/clavulanate</td>
<td>AUGMENTIN inject 2 g/200 mg and tablets 500/125 mg</td>
<td>Initial: 2 g before surgeryMaintenance: 500/125 mg oral/8 h</td>
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<tr>
<td>Vancomycin</td>
<td>VANCOCIN inj 500 mg</td>
<td>1 inject iv before surgery and a 2nd after 8 h</td>
</tr>
<tr>
<td>Metronidazole</td>
<td>FLAGYL inj 500 mg</td>
<td>1 inject iv before surgery and a 2nd after 8 h</td>
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Scrotal trauma

- Burn injury
- Non-penetrating trauma
- Penetrating trauma

Physical examination
Ultrasound

- no parenchymal lesion
  - Observation
  - Analgesics
  - NSAIDs

- parenchymal lesion
  - Surgical examination