Testicular Rupture Following Blunt Force Trauma in Sports

Abstract

Background: A 20 year-old male collegiate basketball player sustained a testicular rupture following a knee to the groin. The subject reported severe pain, nausea, and emesis.

Differential Diagnosis: Testicular hematoma, testicular torsion, epididymitis. Treatment: Initial examination showed excess swelling and tenderness of the right testicle. Ultrasound imaging revealed a testicular rupture. After consulting with the urologist the patient immediately underwent surgery to repair the rupture. A midline scrotal incision was made down to the tunica vaginalis. The blood clot was drained and the testicle was delivered outside the scrotum to debride dead tissue. The rupture was severe and following compression the tunica albuginea was able to be closed. The tunica vaginalis was closed and after hemostasis was established the testicle was returned to the scrotal compartment.

Uniqueness: Few cases of testicular rupture following athletic events have been reported. The location and flexible anatomy of the testes makes them mobile and reduces their risks of injury.

Conclusions: The patient returned to full competition at 12 weeks post-injury and two years later is still complaint and complication free.

Background

• The patient is a 20-year-old male guard for a Division I intercollegiate basketball team (6'3", 190 lbs) who was kneed in the groin during an offseason pick up game. The patient reported severe onset of pain, nausea, and vomiting and immediately reported to the hospital. The patient had no prior testicular injury.

Differential Diagnosis

• Testicular hematoma, hematocoele, epididymitis, hydrocele

Treatment

• Physical evaluation of the injury was limited given the lack of palpation of the testicle due to pain and swelling, promoting the use of ultrasound imaging for further diagnosis.

• Ultrasound images presented a fracture with tissue extruding from the testicle, consistent with a testicular rupture, confirming the physician’s initial assessment.

• Surgical exploration and repair was performed immediately to ensure the best results of repairing the rupture and to decrease long term sexual and psychological damage.

• A midline scrotal incision was made and a clot was drained from the tunica vaginalis. The testicle was then delivered outside the scrotum. The rupture was almost complete from medial to lateral and nearly two thirds of the parenchyma protruded. Necrosis warranted a small amount of tissue removal. The tunica albuginea required compression to be closed and once the tunica vaginalis was closed, the testicle was delivered back into the scrotum following hemostasis.

• The patient returned to full competition 12 weeks post-injury and has remained complaint free for two years. Testicular ruptures are uncommon, possibly due to the lack of reporting or misdiagnosis. The only guaranteed diagnosis of testicular rupture is surgical exploration; ultrasound imaging is helpful but has been documented to show false positives.

Uniqueness

• Testicular trauma is rare due to the location of the testes within the scrotum and their flexible anatomy makes them fairly mobile.

• An estimated 50kg of pressure are required to rupture the tunica albuginea.

Conclusions

• The patient has been complication and complaint free for two years following his injury. Surgery removed necrotic tissue and left permanent sutures but the testicle was salvaged and is functioning.

• Without immediate care, the patient would have likely undergone an orchietomy and dealt with psychological and physical difficulties throughout his life.

Clinical Significance

• The patient had a severe testicular rupture following activity which was recognized and repaired immediately and resulted in no further complications.

• Blunt trauma to the male genitalia occur frequently in sports and should not be dismissed effortlessly because untreated serious injury provokes orchietomy.

• Unrelenting pain and swelling following a testicular injury indicate serious testicular trauma and should be referred immediately.

Improving Clinical Outcomes

• Immediate action taken by the patient and physicians increased the chance of salvaging the testicle and reducing the risk of orchietomy.

References