# >>EMERGENCY ULTRASOUND

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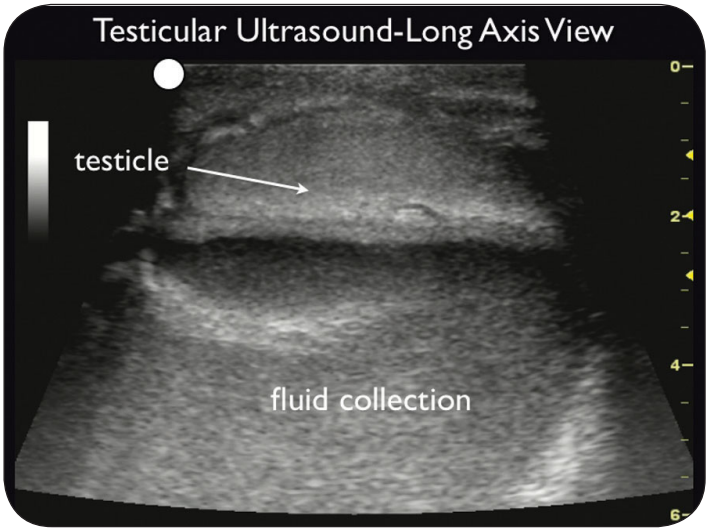
## PRESENTATION




**>>** A 35-year-old man presents to your emergency department for evaluation of acute left testicular pain and swelling. He tells you he sustained a blow to the genital area during a fight and subsequently noticed swelling in his left testicle accompanied by increasing pain. He denies any history of genitourinary problems, with the exception of an enlarged prostate.

On exam, the patient appears to be uncomfortable. His vital signs are: heart rate, 90; blood pressure, 160/80; temperature, 99°F; respirations, 14. The left scrotal region is ecchymotic and massively enlarged with an extremely tender left testicle. The right side is nontender and normal in size.

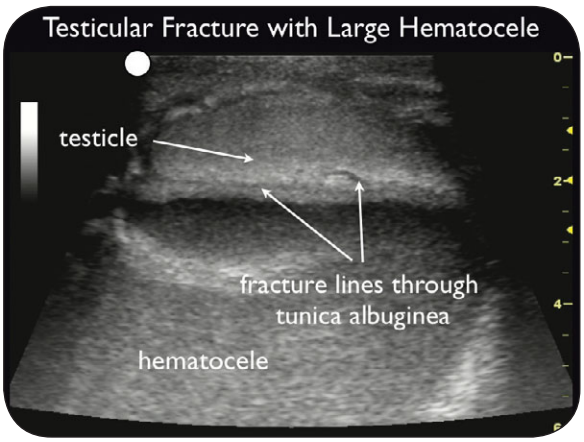
Based on the patient's history and your physical exam findings, you are very concerned that he may have an acute rupture of the testis. When you consult the urology department, the resident on call asks if an ultrasound was performed.

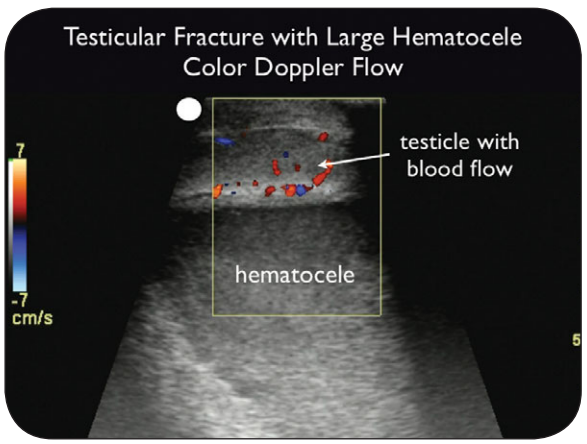
You bring an ultrasound machine to the bedside, place the high-frequency probe in the long-axis orientation, and obtain this image of the left scrotal region.

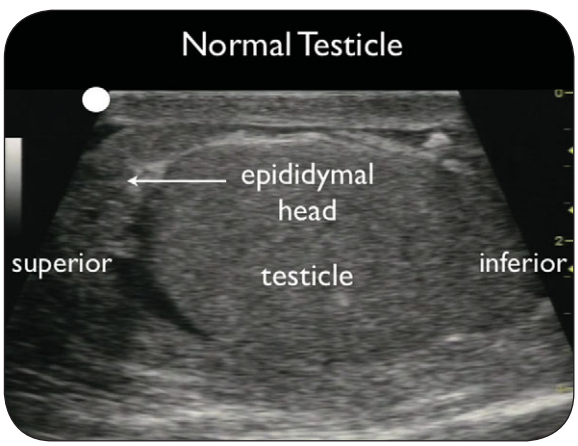
**What is your diagnosis?**

*Turn page for answer* **>>**

## DIAGNOSIS AND DISCUSSION




>> The ultrasound image on the previous page shows a large hematocele within the scrotal sac. The hematocele appears as both bright swirling areas representing clots and an anechoic (dark) mass of fresh blood. The testicle is in the near field area of the screen, but is dwarfed by the large blood collection. The outer fibrous lining of the testes, the tunica albuginea, has several areas of disruption inferiorly. Subsequent color-flow Doppler imaging of the testes reveals adequate blood supply, an encouraging finding in a patient with such significant scrotal trauma.

A proper examination of the scrotum and testicles begins with positioning of the patient in the recumbent frog-leg position. A high-frequency linear-array probe should then be set at approximately 10 MHz, as the testicle is a relatively superficial structure. The probe should initially be placed in a long-axis configuration, with the probe marker facing superiorly. Approaching from a lateral orientation provides the best views of all the contents of the scrotal sac, especially the epididymis and testicle.

Both the left and right scrotal sacs should be examined in order to determine any differences between the two sides. The exam should then proceed to a short-axis plane, with the probe coming in from below the scrotal sac. Each testicle can be examined individually, or the probe can be moved midline in the short-axis plane to show both testicles at once, allowing for immediate comparison. A normal scrotal exam (bottom image) is shown for reference. Color-flow Doppler ultrasonography can assist in determining blood flow to the testicles and can be used together with B-mode imaging during the exam.

The presence of a large hematocele with disruption of the tunica albuginea results in an immediate diagnosis of testicular rupture, an acute urologic emergency. The patient in this case was taken to the operating room and underwent a successful repair of the testicular fracture.

Bedside ultrasound is diagnostically useful not only in scrotal trauma but also in epididymitis, orchitis, testicular torsion, testicular masses, hydroceles, and varicoceles. □

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