

# Case-of-the-Day Answers

## General Ultrasound

*Submitted by*

Teresita Angtuaco, MD • University of Arkansas

### Clinical History

This is a 63-year-old man who was involved in an accident with blunt trauma to the pelvis. The patient was admitted with multiple injuries to his face and lower abdomen, including diffuse swelling of the scrotal region.

**Diagnosis: left testicular rupture after  
left orchiectomy and postoperative  
hematocele.**

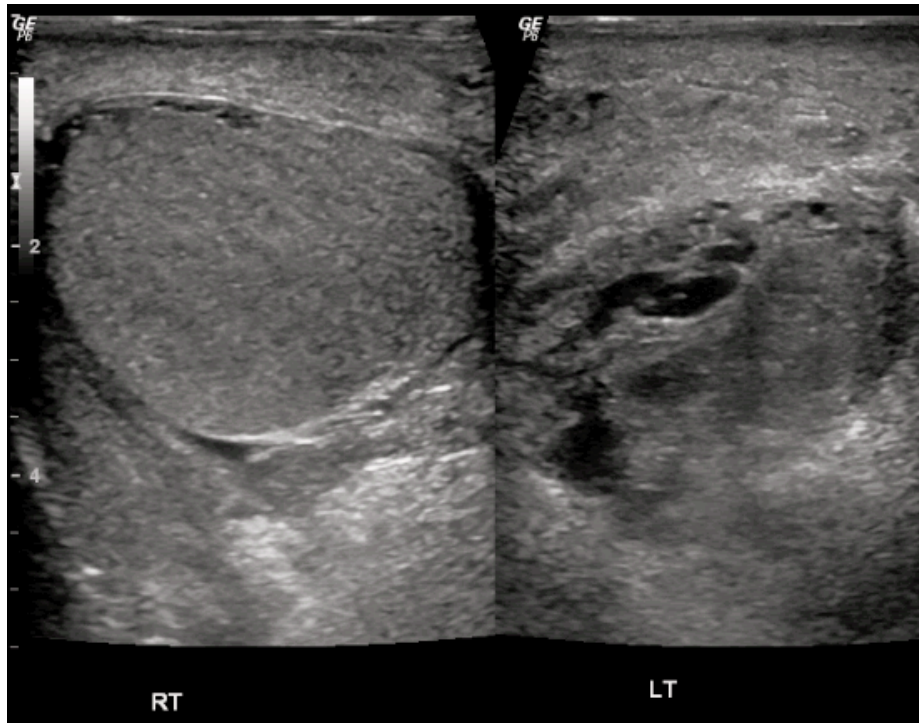


Figure 1 shows a side-by side comparison of both testes. The right is normal, and the left is smaller and ill defined with a surrounding septated fluid collection.

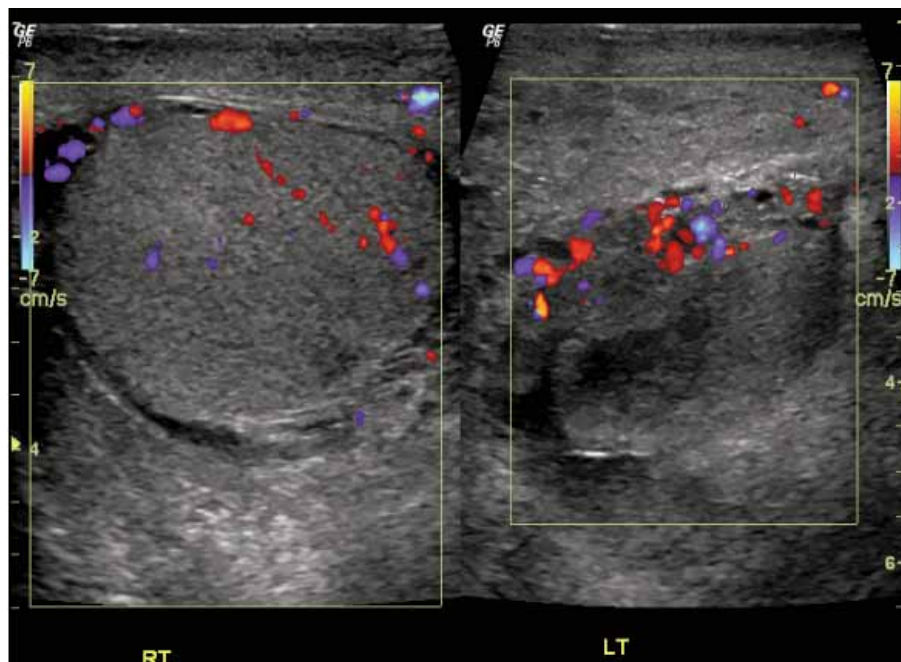
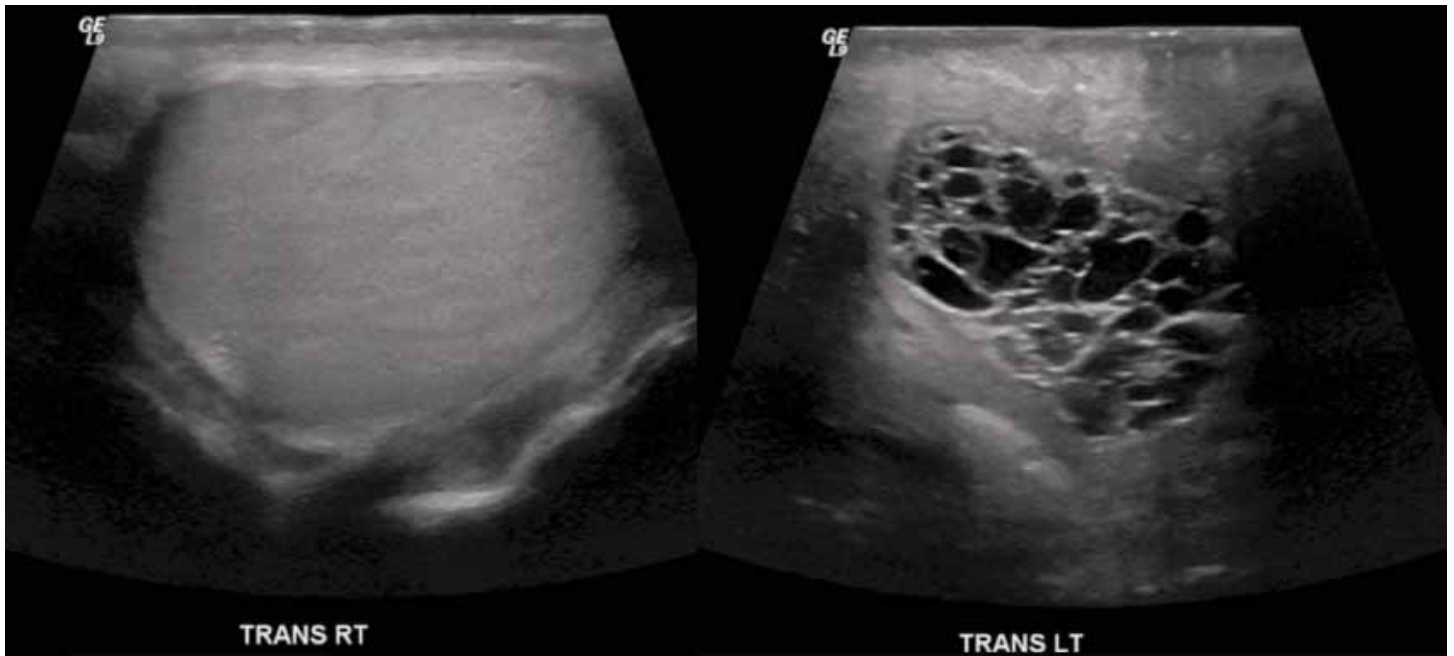
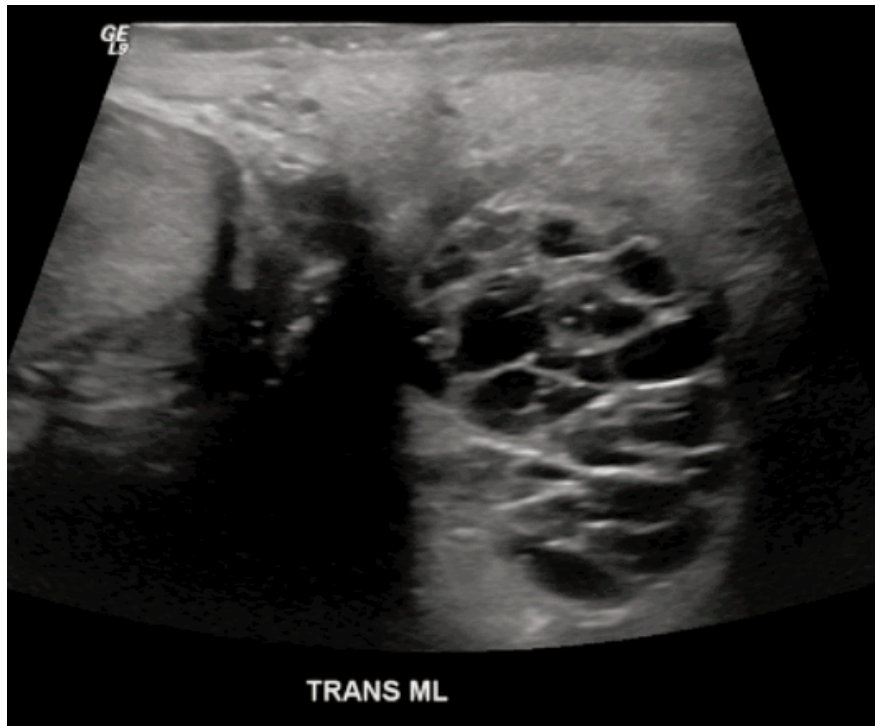


Figure 2 shows comparison color Doppler images of both testes showing normal flow on the right and absence of flow on the left and surrounding hyperemia.



Figures 3 and 4 show postoperative hematocoele filling the left scrotum 4 days after orchiectomy. The right testis remains normal.

## Discussion

The majority of cases of testicular rupture are secondary to blunt trauma. In this particular case, the patient was hit by a tree that fell on the left side of his body, causing multiple injuries to his head, neck, and pelvis. The scrotum was wedged between the tree and the symphysis pubis. Because of other more life-threatening injuries, management of the scrotal injury was delayed. The patient had severe hematoma and swelling of the left lower abdomen and pelvis. At surgery, the testis was deemed unsalvageable due to the extent of the rupture. The seminiferous tubules were seen filling the left scrotal sac surrounded by hemorrhagic fluid.

The ultrasound detection of disruption of the tunica albuginea in a patient with blunt scrotal trauma supports the diagnosis of testicular rupture. Normally, the normal tunica albuginea is a thin echogenic line surrounding the testis. Associated findings of a large testicular hematocele, a contour abnormality of the testis, and heterogeneous echo texture of the testis help confirm the diagnosis. In this case, the left testis is ill defined and much smaller in comparison to the normal right testis. Sensitivity of 100% and specificity of 65% to 93.5% for ultrasound in the detection of testicular rupture is reported in the literature based on ultrasound findings of a heterogeneous echo texture of the testis and contour abnormality.

Prompt surgical exploration and repair of a ruptured tunica albuginea are associated with increased rates of testicular salvage. Testis salvage rates exceed 90% with exploration and repair within 3 days of injury. However in this case, the delay in management and the degree of testicular disruption made it impossible to salvage the testis. When surgery is not performed, complications of conservative management include testicular atrophy, testicular ischemic necrosis, infertility, and delayed orchiectomy. Testis salvage rates with conservative management are approximately 30%. In this patient, a postorchiectomy complication of hematocele is demonstrated, which can mimic varicoceles or a hernia when the history is not provided.

## References

1. Jeffrey RB, Laing FC, Hricak HH, et al. Sonography of testicular trauma. *AJR Am J Roentgenol* 1983; 141:993–995.
2. Dogra VS. Role of US in testicular and scrotal trauma. *Radiographics* 2008; 28:1617–1629.
3. Buckley JC, McAninch JW. Use of ultrasonography for the diagnosis of testicular Injuries in blunt scrotal trauma. *J Urol* 2006; 175:175–178.
4. Deurdulian C, Mittelstaedt CA, et al. US of acute scrotal trauma: optimal technique, imaging findings, and management. *Radiographics* 2007; 27:357–369.
5. Guichard G, El Ammari J, Del Coro C, et al. Accuracy of ultrasonography in diagnosis of testicular rupture after blunt scrotal trauma. *Urology* 2008; 71:52–56.
6. Micallef M, Ahmad I, et al. Ultrasound features of blunt testicular injury. *Injury Int J Care Injured* 2001; 32:23–26.