

CLINICAL PRESENTATION AND RADIOLOGY QUIZ QUESTION

A 21 year old man presents with pain in the left scrotum which has been gradually increasing over the past few days.

What is the imaging examination of choice for the initial evaluation of scrotal pain?

- (a) pelvic computed tomography (CT)
- (b) pelvic magnetic resonance imaging (MRI)
- (c) scrotal ultrasound (US)
- (d) pelvic plain film examination

RADIOLOGY QUIZ QUESTION, ANSWER, AND EXPLANATION

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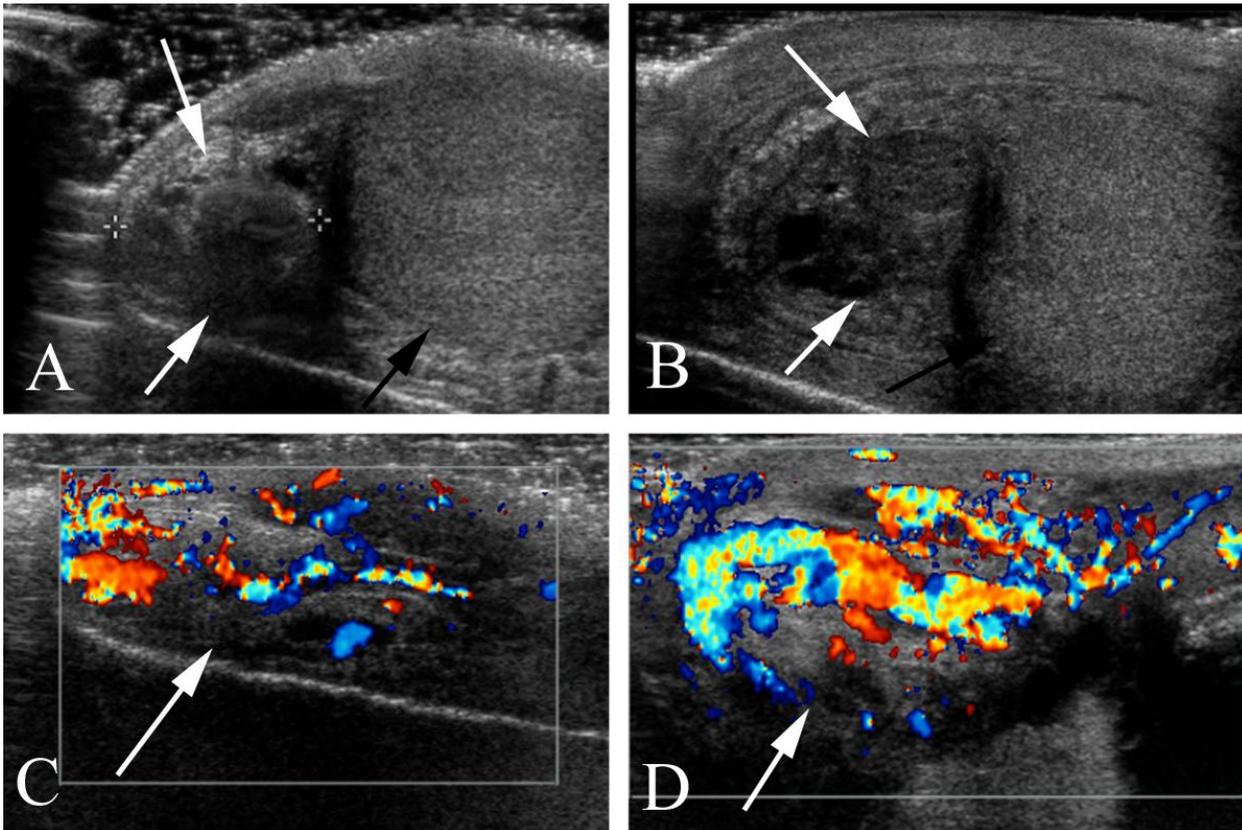
- (a) pelvic computed tomography (CT)
- (b) pelvic magnetic resonance imaging (MRI)
- (c) scrotal ultrasound (US)
- (d) pelvic plain film examination

Answer: (c), scrotal ultrasound. Scrotal ultrasound (US) is the imaging examination of choice for the evaluation of scrotal pain.

Pelvic computed tomography (CT) is not used for primary imaging of scrotal pain, although it may occasionally be used for evaluation of pelvic pain following trauma, and (a) is incorrect. Similarly, pelvic magnetic resonance not used for primary imaging of scrotal pain, and (b) is incorrect. Pelvic plain film examination may be used to evaluate for a possible fracture following trauma, but is not the imaging examination of choice for evaluation of scrotal pain, and therefore (d) is also incorrect.

IMAGING STUDY AND QUESTIONS

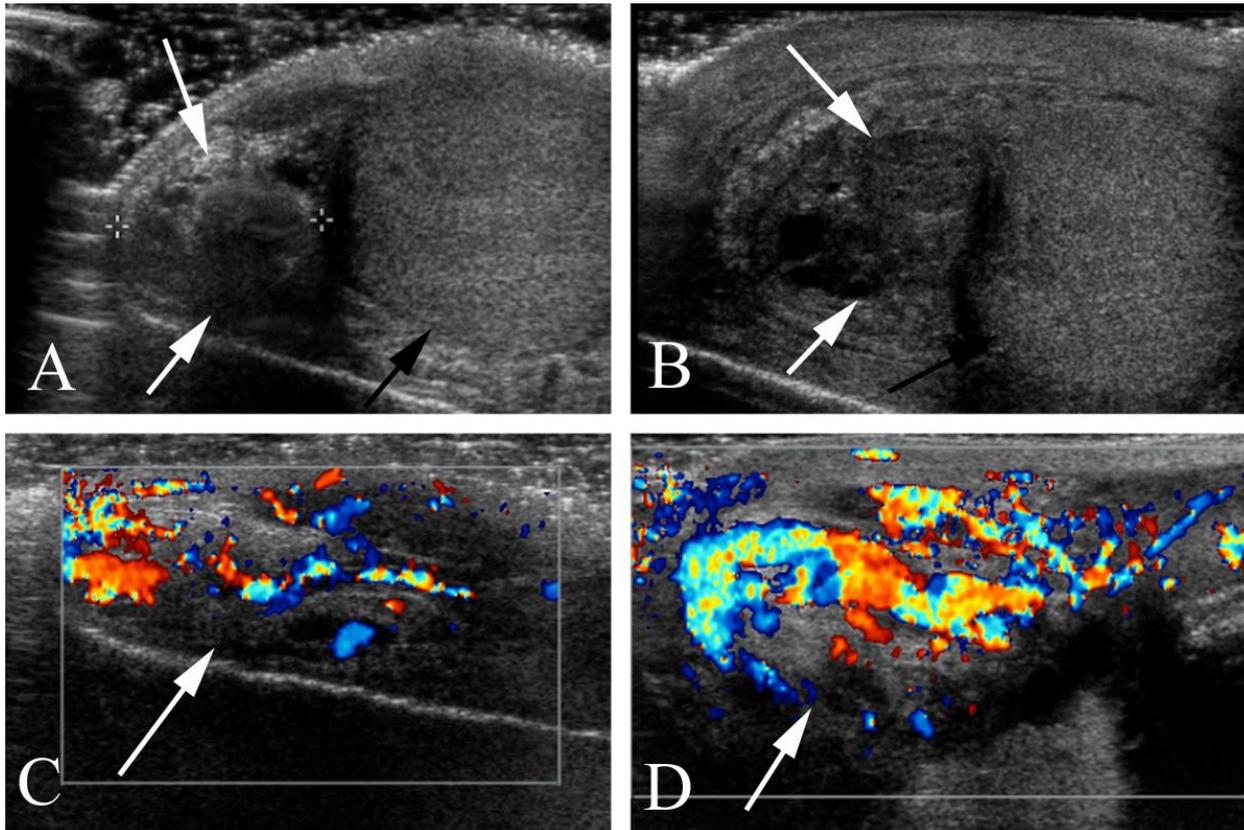
An imaging study was performed.



Imaging questions:

- 1) What type of study is shown in figures A and B?
- 2) What type of study is shown in figures C and D?
- 3) What is depicted by the white arrows?
- 4) What is depicted by the black arrow in A?
- 5) What is the diagnosis?
- 6) What is the next step in patient management?

IMAGING STUDY QUESTIONS AND ANSWERS



Imaging questions:

- 1) What type of study is shown in figures A and B? Gray-scale ultrasound.
- 2) What type of study is shown in figures C and D? Color Doppler ultrasound.
- 3) What is depicted by the white arrows? The epididymis.
- 4) What is depicted by the black arrow in A? The (normal) testicle.
- 5) What is the diagnosis? A and C show the normal, epididymis and a portion of the adjacent testicle. B and D show the abnormal, left epididymis which is swollen and somewhat hypodense (darker) on the gray-scale imaging, and which demonstrates hyperemia (more intense color flow) on the color Doppler studies.
- 6) What is the next step in patient management? Evaluation and treatment for causes of epididymitis.

PATIENT DISPOSITION, DIAGNOSIS, AND FOLLOW-UP

For teaching purposes, only a portion of the history was given above. The complete history was as follows:

The patient was a 21 year old with pain in the left scrotum which had increased over the past few days. In addition, he has experienced some irritation with urination with two or three such episodes over the past month. His left scrotum was swollen to about two times normal size. He had a small amount of brown urethral discharge after micturition. He has no sores on his genitals, and no history of prior sexually transmitted disease. His last partner was approximately 7 weeks ago. On physical examination, he had swelling and tenderness of the left scrotum.

Laboratory testing showed a non-reactive HIV study, a non-reactive VDRL, but was positive for Chlamydia RNA.

SUMMARY

Presenting symptom: Scrotal pain is generally divided into acute and chronic categories. Acute causes include testicular torsion, torsion of the appendix testis, and epididymitis. Chronic causes include varicocele and hydrocele. A clinical history and physical examination is often helpful in further differentiating these causes.

Imaging work-up: Following the history and physical exam, if scrotal pain requires further evaluation, scrotal ultrasound is the examination of choice. Scrotal ultrasound will usually allow confident distinction between epididymitis (which shows swelling and hyperemia of the epididymis), varicocele (which will show multiple large dilated veins in the scrotum, a so-called “bag of worms” appearance), and torsion (which will usually show testicular swelling along with decreased or absent blood flow in the testicle). Torsion, which may be an intermittent process, may have no findings between episodes, and any patient with suspected intermittent torsion should be referred to urology for further evaluation even if the ultrasound study is normal.

Establishing the diagnosis: Ultrasound can provide a confident diagnosis of epididymitis, hydrocele, and torsion (if there are positive findings for torsion). Determining the cause of the epididymitis relies on the clinical history, taking into account such features as whether there has been direct trauma, excessive straining (e.g., the weight-lifting exercise known as “squats”), or exposure to sexually transmitted disease (STDs). Suspected STDs should be further evaluated with laboratory testing (as in this case).

Treatment: Epididymitis secondary to sexually transmitted diseases requires treatment directed at the underlying causative agent.

Take-home message: Ultrasound is the imaging study of choice for evaluation of scrotal pain.

FURTHER READING

Brenner JS, Ojo A. Causes of painless scrotal swelling in children and adolescents. UpToDate, accessed 9/4/2009.

Brenner JS, Ojo A. Causes of scrotal pain in children and adolescents. UpToDate, accessed 9/4/2009.

Eyre RC. Evaluation of non-acute scrotal pathology in adult men. UpToDate, accessed 12/23/08.

Renfrew, DL. Female Pelvis and Male Scrotum. Chapter 2 of *Symptom Based Radiology*, Symptom Based Radiology Publishing, Sturgeon Bay, WI, 2010, available for no charge at www.symptombasedradiology.com.