

Ultrasound of the Scrotum

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What is Scrotal Ultrasound?

Ultrasound or sonography involves sending sound waves into the body. These sound waves are reflected off the internal organs and are recorded by special instruments that create images of anatomic parts. No ionizing radiation (x-ray) is involved in ultrasound imaging. Ultrasound images are captured in real-time so they can show movement of internal tissues and organs, such as the flow of blood in arteries and veins.

Ultrasound imaging of the scrotum is the primary imaging method used to evaluate disorders of the testicles and surrounding areas. It is used when a patient is experiencing pain or swelling in the scrotum, a mass has been felt by the patient or doctor, or there's been trauma to the scrotal area.

What are some common uses of Scrotal Ultrasound?

For males, ultrasound is a valuable tool for evaluating the testes, the epididymis (a tube that collects sperm made by the testicles) and the prostate. Scrotal ultrasound imaging can help determine the cause of testicular pain or swelling. Some of the problems ultrasound imaging can identify include: inflammation of the scrotum, an absent or undescended testicle, testicular torsion, abnormal blood vessels or a lump or tumor.

A sudden onset of pain in the scrotum is very serious. The most common cause of scrotal pain is epididymitis, an inflammation of the epididymis. It is

treatable with antibiotics. Left untreated, this condition can lead to an abscess or loss of blood to the testicles.

Ultrasound can detect an absent or undescended testicle as well. In rare cases a testicle may fail to develop. More often, patients have an undescended testicle. It is estimated that approximately three percent of full-term baby boys have undescended testicles. It's important to diagnose an undescended testicle because it has a very high probability of developing cancer if left untreated.

Ultrasound can identify testicular torsion, the twisting of the spermatic cord that contains the vessels that supply blood to the scrotum. Caused by abnormally loose attachments of tissues that are formed during fetal development, torsion commonly appears during adolescence and is very painful. Torsion requires immediate surgery to avoid permanent damage to the testes.

Ultrasound also can be used to locate and evaluate masses (lumps or tumors) in the scrotum. The majority of scrotal masses are located outside of the testes. Most masses found outside the testicles are benign or non-cancerous; most inside the testicles are malignant or cancerous. Collections of fluid and abnormalities of the blood vessels may appear as masses and need to be assessed by ultrasound.

How should I prepare for my Scrotal Ultrasound procedure?

Besides wearing comfortable, loose-fitting clothing, there is no preparation for an ultrasound exam of the scrotum.

What does the Scrotal Ultrasound equipment look like?

The equipment consists of a transducer and a monitoring system. The transducer, a hand-held, wand-like device that resembles a microphone, is gently guided over and around the scrotum and surrounding area.

The ultrasound image is immediately visible on a nearby screen that looks much like a computer or television monitor. The radiologist or sonographer watches this screen during the examination and captures representative images for storage. Often, the patient is able to see the screen as well.

How does the Scrotal Ultrasound procedure work?

Ultrasound imaging is based on the same principles as the sonar used by bats, ships at sea and anglers with fish detectors. As a controlled sound wave bounces against objects, its echoing waves can be used to identify how far away the object is, how large it is, its shape and its internal consistency (fluid, solid or mixed).

The ultrasound transducer functions as both a loudspeaker (to transmit sounds) and a microphone (to record the sounds). A small amount of gel is applied to the scrotal area to enhance the sound transmission. When the transducer is placed against the skin it directs a stream of inaudible, high-frequency sound waves into the body. As the sound waves echo back from the body's fluids and tissues, the sensitive microphone in the transducer records the strength and character of the reflected waves.

How is Scrotal Ultrasound performed?

The patient lies on his back on an examination table. A gel is applied directly to the scrotum. The radiologist or sonographer gently places a transducer on the skin, moving it around to obtain different views of the scrotum and testicles. The images appear in real-time on a monitor. The examination usually takes less than 30 minutes.

When the examination is complete, the patient may be asked to dress and wait while the ultrasound images are reviewed, either on film or on a monitor. Often, the sonographer or radiologist is able to review the ultrasound images in real time as they are acquired, and the patient can be released immediately.

What will I experience during my Scrotal Ultrasound procedure?

There is usually no pain during a scrotal ultrasound. If the scrotum is very tender some discomfort may occur from the slight pressure of the transducer.

What are the benefits vs. risks of Scrotal Ultrasound?

Benefits

- Ultrasound of the scrotum is the primary imaging method used to evaluate disorders of the testicles and surrounding areas.

- Ultrasound imaging is non-invasive (no needles or injections in most cases) and usually painless.
- Ultrasound is widely available.
- Ultrasound uses no ionizing radiation.
- Ultrasound can visualize structure, movement and function in the body's organs and blood vessels.
- Ultrasound provides real-time imaging, making it a good tool for guiding minimally-invasive procedures such as needle biopsies.

Risks

- For standard diagnostic ultrasound there are no known harmful effects on humans.

What are the limitations of Scrotal Ultrasound?

Patients must lie very still to obtain clear and concise images.