

GENERAL ULTRASOUND SCROTAL EXAM

PURPOSE:

1. To determine the presence or absence of disease.
2. To identify and quantitate pathology, which may be present by evaluating characteristics, vessels for focal or diffuse abnormalities.
3. To improve patient outcomes by identifying abnormalities and disease, categorizing severity, and planning for interventional and/or medical correction.

PROCEDURE:

1. The complete study may/may not include Real Time, Doppler or Color interrogation.
 - a) A complete scrotal study includes views of each testicle and should include the superior, mid, and inferior portions, as well as its medial and lateral borders. Also include the adjacent epididymis.
2. No patient preparation is required for this test.
3. Test results with patient history information will be kept in a file in the department with the referring physician receiving an interpretation report.
4. Study data is documented and stored by:
 - a) digital storage
5. At conclusion of test sonographer will complete:
 - a) appropriate technologist worksheet with findings
 - b) complete appropriate charges/billing information
6. Call preliminary report as indicated.

STATEMENT OF INDICATIONS: One or more of the following indications must be present

1. Scrotal masses
2. Metastatic germ cell tumor
3. Testicular neoplasm's, leukemia, or lymphoma
4. Testicular microlithiasis
5. Scrotal pain
6. Scrotal trauma
7. Undescended testes
8. Suspected varicoceles
9. Suspected abscess

EQUIPMENT:

1. Real-time scanner using:
 - a) Linear (straight or curved) transducers (5MHz or greater)- wide near field
2. Doppler
3. Color Doppler
4. Ultrasound acoustic gel
5. Appropriate patient drape
6. Towels
7. Appropriate cleaning solution for transducer

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PROCEDURE FOR SCROTAL ULTRASOUND:

1. The patient should be in the supine position. Another towel is draped across the lower abdomen and is used to hold the penis to the abdomen and away from the scrotum. Apply ultrasound gel to the right scrotum and begin scanning in Transverse plane.
 - a) Scrotal skin thickness should be evaluated
2. In sagittal, along the anterior aspect of the scrotum, image the right testis including the mediastinum testis, measuring in long axis. Scan medial and lateral borders.
3. In transverse, image the right testis at the mid-portion and measure in AP and transverse.
4. Scan slightly anteriorly and image the superior portion of the testis.
5. Scan back down to the mid-portion and angle slightly posteriorly to image the inferior portion of the testis.
6. Place the transducer on the left scrotum and follow the same protocol as for the right scrotum.
7. In transverse, place the transducer to the side of both scrotums, simultaneously and image both testes to compare relative echogenicity.
8. In sagittal, image the right and left testis epididymis.
9. Use Doppler to document intratesticular veins and arteries.
 - a) Valsalva maneuver or upright positioning can be utilized to detect reflux (flow reversal for at least 2 seconds or increased amplitude).
 - b) Include lower inguinal region and spermatic chord for extension of varicocele.

SPECIAL STATEMENT REGARDING PROTOCOL: It is understood that other additional views, Doppler sampling sites, color settings, velocity ratios and measurements etc., will be used by the professional sonographer in evaluating any pathologic or suspected pathologic condition.

EVALUATION AND DIAGNOSTIC CRITERIA:

1. Real-time evaluation and documentation should include but not be limited to:
 - a) Size and Shape (approx.3x2.5 cm)
 - b) Echogenicity
 - c) Echo-texture (homogeneous/heterogeneous)
 - d) Lesion (cystic or solid)
 - i) Margins (thin, well defined /irregular, thick)
 - ii) Shape (spherical, ovoid/ irregular, ill-defined borders)
 - iii) Size
 - iv) Location
 - v) Lobulations (>or<3)
 - vi) Finger-like extensions
 - vii) Enhanced through transmission (posterior enhancement)
 - viii) Posterior attenuation
 - e) Focal or diffuse enlargement of epididymis
 - f) Fluid collection
2. Doppler/Color Doppler criteria should include but is not limited to:
 - a) Evaluating the presence or absence of blood flow:
 - i) Internal in mass

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- ii) External to mass
- iii) Laminar flow patterns
- iv) Normal vascularity
- v) Turbulence and mosaics
- b) Evaluating suspected infection (epididymitis / orchitis)
- c) Rule out torsion - color flow and doppler wave form are mandatory to rule out torsion.
- d) Assessment of resolution, persistence or recurrence of varicoceles.

SPECIAL STATEMENT REGARDING DIAGNOSTIC CRITERIA: It is recognized that individual patients and disease presentations will differ. For this reason, this document is meant to be a statement of standard. This document is not meant to supersede the qualified interpreting physician's prerogative to add or adjust the interpretation according to his/her best judgment.

GUIDELINES FOR CALLING PRELIMINARY REPORTS:

1. Reporting preliminary or technical findings is both desirable and necessary in clinical practice.
2. The sonographer may/may not make the preliminary nature of the report known to the referring or interpreting physician.
3. The technical findings must be interpreted within the above stated pre-established diagnostic criteria guidelines.
4. When to call the referring or interpreting physician with a preliminary report:
 - a) Neoplasm
 - b) Torsion of testes
 - c) Testicular rupture

REFERENCES:

1. ACR Standard for the Performance of a Scrotal Ultrasound Examination. Revised 1997
2. AIUM Standards and Guidelines for the Accreditation of Ultrasound Practices.
3. Ultrasound Procedure Protocol-The Jefferson Ultrasound Research and Education Institute. Second edition. June 1995
4. SDMS GUIDELINES FOR ABDOMEN REVIEW. Revised 1994.
1. **Winkelbauer, F. et al. Doppler Sonography of Varicocele: Long-term Follow-up After Venography and Transcatheter Sclerotherapy. J. Ultrasound Med. 13:953-958. 1994.**