Testicular

Billing: PW Doppler **2 testicles**= US Testicle w/Doppler
PW Doppler **1 testicle**= US Testicle/Penis + Doppler Limited

Indications

- Evaluation of scrotal pain (trauma, ischemia/torsion, infection/inflammation)
- Evaluation of palpable inguinal or scrotal masses
- Evaluation of scrotal asymmetry, swelling, enlargement
- Evaluation of potential scrotal hernias
- Evaluation for varicocele
- Evaluation for male infertility
- Follow-up prior ultrasound findings
- Localization of undescended testes
- Evaluation for primary scrotal tumor in patient with metastatic germ cell tumors or retroperitoneal adenopathy
- Follow-up prior primary testicular neoplasm, leukemia, or lymphoma
- Follow-up abnormal findings from other imaging modalities
- Evaluation for intersex conditions

Equipment

- Linear Transducer
  - 7-15 MHz

Patient Position

- Supine
- May support scrotum on a towel if needed

Patient Prep

- None

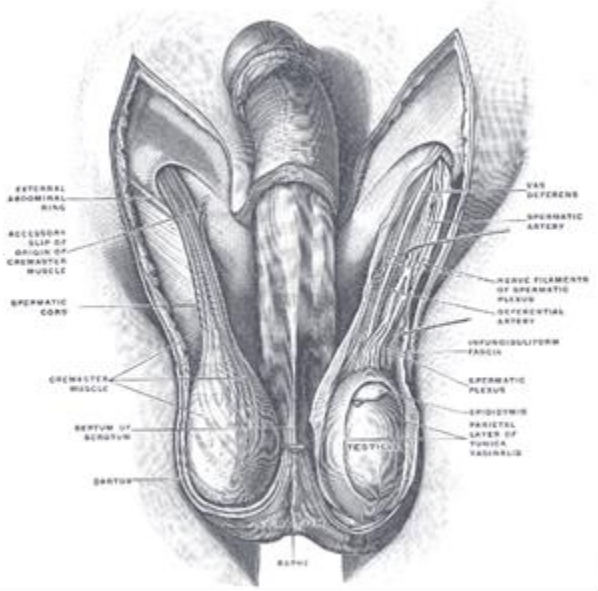
Evaluation

Testicle/Hemiscrotum

- Measurements in 3 dimensions (Long, AP, Trans)
- Echogenicity
  - *Gray scale settings should remain the same when comparing right and left testicles*
- Diffuse pathology
- Focal pathology
  - Document
    - Location
    - Measurements (Long, AP, Trans)
    - Blood flow
- Borders/contour
- Scrotal skin thickness
- Hydrocele
- Blood flow
  - Absence of flow
  - Hyperemia
    - *Color flow setting should remain the same when comparing right and left testicle*
  - Varicocele
- If testicle NOT identified in scrotum, scan into the inguinal canal

Epididymis

- Head, body & tail
- Evaluate echogenicity compared to testicle
  - Should appear isoechoic
- Evaluate for masses or cysts
- Evaluate for hyperemia
  - Compare to testicle



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Images

Testicle

Transverse (Right & Left)

- Superior Testis
- Mid Testis
- Inferior Testis
- Cine clips superior to inferior
  - *If testicle(s) NOT identified in scrotum, include trans cine of inguinal canal(s)*

Longitudinal (Right & Left)

- Lateral Testis
- Mid Testis
- Medial Testis
- Cine clips lateral to medial

Measurements (Right & Left)

- Long, AP, Trans

Color Doppler (Right & Left)

- Mid testicle (either plane)
- Power Doppler if needed

Epididymis

Transverse (Right & Left)

- Epididymal head

Longitudinal (Right & Left)

- Epididymal head next to testicle
  - Compare echogenicity

Color Doppler (Right & Left)

- Epididymis compared to testicle
- Power Doppler if needed

Comparison (Right & Left)

Testicle *Split Screen preferred* (Transverse)

- Gray-scale
- Color Doppler
- *Gray scale and Color Doppler setting should remain the same on comparison images*

Torsion/Acute Pain

- Pulsed Doppler (Right & Left)
  - Arterial and venous signal within each testicle to evaluate for torsion or on patients with acute scrotal pain*
- Cine with Color Doppler inferior testicle to superior cord

Varicocele (Right & Left)

- If asked for or incidentally found
  - Color Doppler
    - w/ & w/o Valsalva
  - Measure largest vein diameter
    - w/ & w/out Valsalva
    - Varicocele >3.0mm
- Infertility
  - Color Doppler
    - w/ & w/o Valsalva
  - Measure largest vein diameter
    - w/& w/out Valsalva
    - Varicocele >2.0mm
- Left varicocele
  - Trans cine of left kidney/retroperitoneum
- Right varicocele
  - Trans cine of right mid to lower abdomen

**Acute scrotal pain is pain that is new, different, or recent.*

3/13/2025 CKH

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Additional Information

- Color/Power/Pulsed Doppler
  - Use the same Color/Power Doppler settings when comparing the testicles side-by-side and when comparing the epididymis to the testicle
  - Venous flow
    - Decrease scale, decrease wall filter, and look near mediastinum testis for draining vein
  - Reversal of flow in diastole can be suggestive of venous infarct in patients with epididymo-orchitis
- Acute epididymitis
  - Enlarged hypoechoic
  - Hyperechoic due to hemorrhage
  - Reactive hydrocele or pyocele
  - Scrotal wall thickening
- Chronic epididymitis
  - Enlarged hyperechoic
  - calcifications
- Heterogeneous testicles
  - Leukemia and lymphoma are more likely to be bilateral
  - Infection is more likely to be unilateral
- Testicular lesions
  - Benign are more commonly extra testicular
  - Malignant are more commonly intratesticular
- Varicoceles can be associated with renal tumors compressing the gonadal vein
  - Evaluate the abdomen and/or retroperitoneal areas

References

- ACR-AIUM-SPR-SRU Practice Parameter for the Performance of Scrotal Ultrasound Examinations revised 2020 https://gravitas.acr.org/PPTS/GetDocumentView?docId=99+&releaseId=2
- Dogra VS, Gottlieb RH, Oka M, Ruben DJ. Sonography of the Scrotum. *Radiology*. April 2003; 227: 18-36. http://pubs.rsna.org/doi/pdf/10.1148/radiol.2271001744