SCROTAL ULTRASOUND PROTOCOL

BILLING CODES:
USCRO- Scrotal 2D only, no spectral doppler performed
USCRODOP- Scrotal 2D, arterial and venous spectral doppler (USCRO & UORGDC bundled)
or
USCRO and UORGDC charged separately if arterial and venous doppler performed
USCRO and UORGDL charged separately if arterial or venous doppler performed

UHERNIA - Add if also evaluating for hernia. If bilateral, add two.

PATIENT PREP: No prep

EQUIPMENT: High-frequency linear array transducer with a frequency range of at least 7-18 MHz

GENERAL GUIDELINES: Start acquiring images of the right testicle and end with the left. Include bilateral views with both testes as described below.

IMAGES TO OBTAIN

TESTICLE: ***obtain bilaterally***

- Transverse images of superior, mid and inferior testicle
- Transverse cine sweep from superior to inferior
- Transverse measurement of height and width
- Sagittal images of the medial, mid and lateral testicle
- Sagittal cine sweep from medial to lateral
- Sagittal length measurement
- Sagittal image through testicle to document flow pattern. If flow not seen with color, use CPA and/or MFI.
- Document any abnormality in 2 planes.
- If any abnormality is seen, document flow pattern of testicle and abnormality/mass with color, CPA and/or MFI.
- **Bilateral views** showing both testicles using wide screen or a dual screen image. If using dual screen, always use the same 2D and color doppler settings for both sides.
    - Side by side images of both testicles for echo/size comparison
    - Side by side color image of both testicles for flow comparison

EPIDIDYMIS: ***obtain bilaterally***

- Sagittal views of epididymal head, body and tail.
- Measure AP dimension of epididymal head.
- Sagittal image using color flow to document flow pattern in head and any areas of abnormality.
- Document any spermatoceles, cysts or masses in 2 planes.

SPERMATIC CORD: ***obtain bilaterally***

- Document spermatic cord to look for varicoceles.
- Measure spermatic cord with and without Valsalva. The normal size of the vessel is less than 3mm, measured from inner wall to inner wall.
- Color image of spermatic cord with and without Valsalva.
- Use additional cine clips to document any abnormality seen
- **If varicocele is present on either side**, do MFI of both testicles for low flow perfusion comparison. Use dual screen with the same doppler settings for both sides. Patients can have low flow on the side that has the varicocele, and this can be the cause for their pain.
- **In cases of suspected torsion**, use a transverse cine sweep to document the spermatic cord from the inguinal canal to the testicle to document rotation or lack of rotation in the cord.

TORSION/ACUTE PAIN:

- Transverse cine sweep to document the spermatic cord from the inguinal canal to the testicle to document rotation or lack of rotation in the cord.
- MFI to show low flow perfusion or absence of flow
- **SPECTRAL DOPPLER IMAGES:** ***obtain bilaterally***

  Document arterial/venous spectral doppler in each testis in the setting of acute trauma or suspected torsion occurring within the last 7 days. Spectral doppler is not needed if the patient is experiencing consistent chronic pain longer than 7 days. However, if the pain is acute on chronic with acute exacerbation within the last 7 days, spectral doppler should be performed to rule out torsion as this could indicate intermittent torsion.

  Billing codes to be used:
  - **USCRODOP-** Scrotal with arterial and venous spectral doppler (USCRO and UORGDC bundled)

    or
  - **USCRO and UORGDC** charged separately if arterial and venous spectral doppler performed
  - **USCRO and UORGDL** charged separately if arterial or venous spectral doppler performed

TRAUMA:

- Sagittal and transverse cine clips of both testicles
- MFI of both testicles looking for areas of ischemia or other flow abnormalities.

PALPABLE AREA:

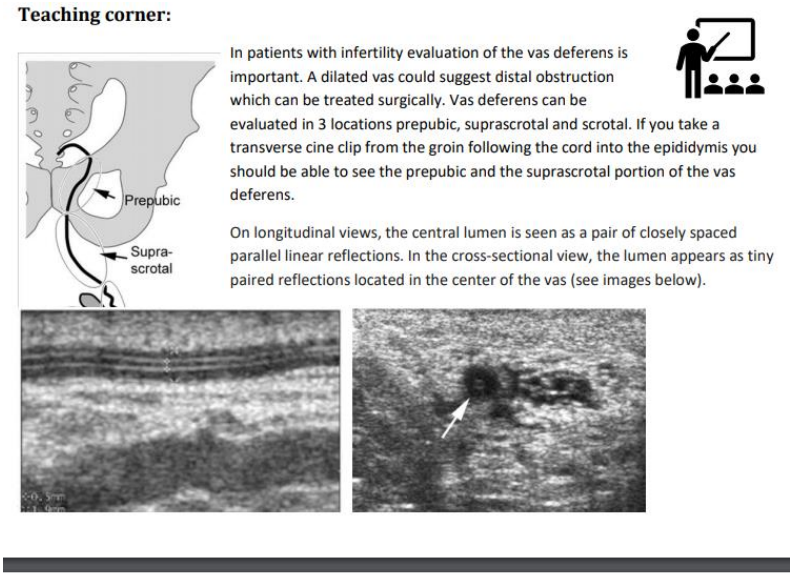
- If a palpable abnormality is included in the indication for the exam, image directly over the palpable area and label the images as the "Area of concern".
- If a cyst is seen near the scrotal wall, apply pressure to make it move in order to help determine if its origin is testicular or within the tunica.

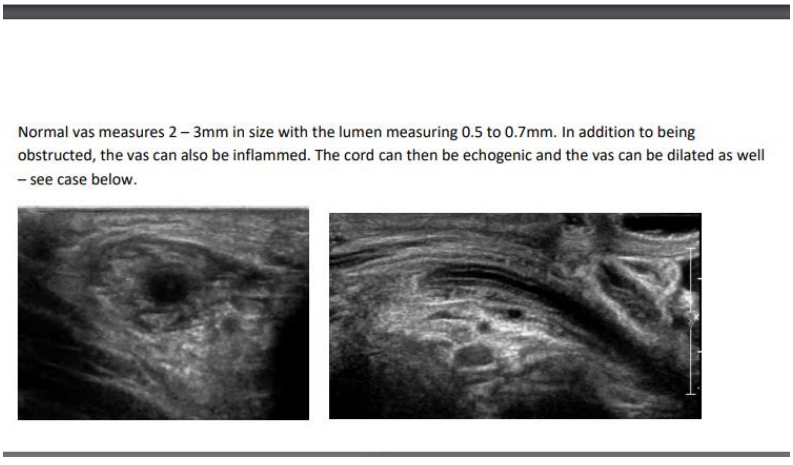
HERNIA IMAGES:

- If the indication includes a question of groin hernia, a separate hernia protocol should be performed and billing code UHERNIA and should be added to the exam charges. Use a separate Viewpoint report for each exam. If looking for bilateral groin hernias, two UHERNIA charges should be added since UHERNIA is technically an extremity charge. A ventral hernia is charged as a limited abdomen (UABDL) and can also be added if performed in addition.

VAS DEFERENS: Include for patients with infertility, azoospermia or evaluation of vas deferens post vasectomy for recannulation.

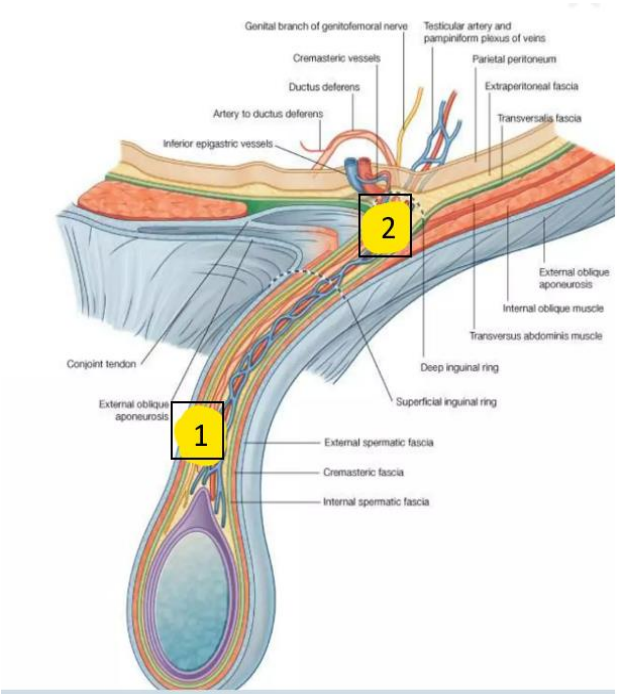
- Transverse images of the vas deferens in 3 locations –
  - prepubic
  - suprascrotal
  - scrotal
- Transverse cine clip of vas deferens from groin following the cord into the epididymis.
- Sagittal views of vas deferens
- Sagittal measurement of
  - Overall thickness -from hypoechoic wall to hypoechoic wall. Normal is less than 3mm.
  - Lumen thickness -from echogenic mucosa to echogenic mucosa. Normal is less than 0.7mm.





REFLUX AND VARICOCELE REPAIR:

- These patients will be referred to us by our IR doctors and the requisition will clearly state to look for "reflux". If this is the case, we need to do a full scrotal exam and the following extra images:
  - 1- Spectral doppler of the vein with Valsalva within the pampiniform plexus near the testicle (Same area we eval for varicocele currently.)
  - 2 - Spectral doppler of the vein with Valsalva within the pampiniform plexus near within the groin/inguinal canal. (Same area we eval for indirect hernias, where the spermatic cord crosses into the abdomen.)
- As with any case with a varicocele, do MFI of both testicles for low flow perfusion comparison. Use dual screen with the same doppler settings for both sides. Patients can have low flow on the side that has the varicocele, and this can be the cause for their pain.



SCROTAL ULTRASOUND IMAGE LIST

IMAGE	MODE
Bilateral testicles wide or dual screen	2D
Bilateral testicles w/ color	Color
Right Testicle Trans Sup	2D
Right Testicle Trans Mid	2D
Right Testicle Trans Mid w/ width and height	2D +
Right Testicle Trans Inf	2D
Right Testicle Trans S-I cine	Cine
Right Testicle Long Mid	2D
Right Testicle Long Mid w/ length	2D +
Right Testicle Long Lat	2D
Right Testicle Long Medial	2D
Right Testicle Long M-L cine	Cine
Right Testicle Long Mid w/color	Color
If for r/o torsion or pain <7 days add: *-Spermatic Cord Trans I-S cine* *-Arterial & Venous Doppler*	 *Cine* *Spectral*
If for Trauma: *-Sag and Trans cine clips of both testicles* *-MFI for areas of ischemia/other abnormality*	 *Cine* *MFI*
Right Epi Head Long	2D
Right Epi Head Long w/ AP measurement	2D +
Right Epi Head Long w/ color	Color
Right Epi Body Long	2D
Right Epi Tail Long	2D
Right Spermatic Cord Long	2D
Right Spermatic Cord Long w/color	Color
If varicocele present: *-MFI both testes flow comparison w Dual Screen*	 *DualMFI*
If for infertility, azoospermia, recanalization: *-Vas Deferens Trans – prepubic, suprascrotal and scrotal* *-Vas Deferens Cine S-I from groin to epididymis* *-Vas deferens sag w thickness – overall and lumen*	 *2D* *Cine* *2D+*
If for palpable area: *-Sag and Trans images labeled as "Area of Concern" --Measure and use color/MFI as needed*	 *2D/Cine* *Color*

IMAGE	MODE
Left Testicle Trans Sup	2D
Left Testicle Trans Mid	2D
Left Testicle Trans Mid w/ width and height	2D +
Left Testicle Trans Inf	2D
Left Testicle Trans S-I cine	Cine
Left Testicle Long Mid	2D
Left Testicle Long Mid w/ length	2D +
Left Testicle Long Lat	2D
Left Testicle Long Medial	2D
Left Testicle Long M-L cine	Cine
Left Testicle Long Mid w/color	Color
If for r/o torsion or pain <7 days add: *-Spermatic Cord Trans I-S cine* *-Arterial & Venous Doppler*	 *Cine* *Spectral*
If for Trauma: *-Sag and Trans cine clips of both testicles* *-MFI for areas of ischemia/other abnormality*	 *Cine* *MFI*
Left Epi Head Long	2D
Left Epi Head Long w/ AP measurement	2D +
Left Epi Head Long w/ color	Color
Left Epi Body Long	2D
Left Epi Tail Long	2D
Left Spermatic Cord Long	2D
Left Spermatic Cord Long w/color	Color
If varicocele present: *-MFI both testes flow comparison w Dual Screen*	 *DualMFI*
If for infertility, azoospermia, recanalization: *-Vas Deferens Trans – prepubic, suprascrotal and scrotal* *-Vas Deferens Cine S-I from groin to epididymis* *-Vas deferens sag w thickness – overall and lumen*	 *2D* *Cine* *2D+*
If for palpable area: *-Sag and Trans images labeled as "Area of Concern" --Measure and use color/MFI as needed*	 *2D/Cine* *Color*

SCROTAL ULTRASOUND PROTOCOL HISTORY

	Date	Changes made	By whom
Updated	10/28/21		Becky Marion
Updated	03/24/22	**Added** -Include "area of concern" images **Added** -Use same color doppler settings for both testicles. **Added**- Hernia to be added on if mentioned in indication **Added** -Vas deferens images to be done for infertility **Added** - transverse sweep through spermatic cord for suspected torsion looking for rotation	Format change
Added	8/18/23	**Added** - If varicocele present, do MFI of both testes for low flow perfusion comparison using dual screen and the same doppler settings.	Manjiri Dighe
Added	10/31/23	**Added** – Required reflux images if requested by IR for varicocele repair	Manjiri Dighe
Reviewed	02/29/24	**Added** - Cine sweep in sag and trv of testicle **Reduced** -Color only needed in sagittal plane of individual testicle; transverse color is still needed in the bilateral view of both testes **Added**- Apply pressure if cyst seen in wall to determine if in testicle or tunic **Reduced**- Transverse view of epi head not needed **Reduced**-Color is only need on epi head and any areas of abnormality. **Added -**For Trauma: Sag & trv cine clips and MFI for ischemia **Changed**- Spectral doppler statement was changed to say "within last 7 days" instead of <6 days and added "However, if the pain is acute on chronic with acute exacerbation within the last 7 days, spectral doppler should be performed to rule out torsion as this could indicate intermittent torsion."	Protocol Meeting Attendees Dighe, Dhyani, Linnau, Jagtiani, R. Betit Fitzgerald, D. Edden