

## Retroperitoneum – Renal Bladder Ultrasound Protocol

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### **\*\*NOTE for all examinations:**

1. If documenting possible flow in a structure/mass, all color/Doppler should be accompanied by a spectral gate for waveform tracing
2. CINE clips to be labeled:
  - MIDLINE structures: “right to left” when longitudinal and “superior to inferior” when transverse
  - RIGHT/LEFT structures: “lateral to medial” when longitudinal and “superior to inferior” when transverse

**\*\*each should be 1 sweep, NOT back and forth\*\***

### **WHAT TO INCLUDE:**

**Included anatomy will depend on if the indication is urinary tract related or not. Specifically, if urinary tract related, do NOT include retroperitoneal vessels. If NOT urinary tract related, all listed retroperitoneal vessels must be included for appropriate billing.**

If indication is related to the urinary tract (this will be nearly all exams):

-Kidneys

-Bladder: full always attempted, jets always attempted (**see notes below re: when to have patient void and when to do bladder volumes**)

-NOTE: Aorta does NOT need to be included if the indication is related to the urinary tract

(Male patients – prostate, see below)

If indication is anything else (i.e., NOT related to the urinary tract – very rare; example indication: renal artery hypertension):

-Kidneys

-Bladder (**see notes below re: when to have patient void and when to do bladder volumes**)

-Aorta

-IVC

-Common iliac artery origins

*-NOTE: All the retroperitoneal vessels listed above must be included if the indication is NOT urinary tract related.*

(Male patients – prostate, see below)

**\*\*WHEN should the patient void:**

(1) Indication = retention, urgency, UTI or similar; or, bladder VERY distended

-Void + pre/post volumes

(2) Hydronephrosis with full bladder seen at time of kidney imaging

-Void and re-assess if hydro persists afterward; pre/post volumes are NOT necessary

-Prostate (in men) does not need to be measured UNLESS indication is: retention, urgency or similar; OR, grossly enlarged

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**KIDNEYS:**

-Maximum renal length only for all patients (adult and pediatric)

-->AP and Trans measurements and renal volume are not required

-Cortex does **not** need to be measured

-Longitudinal and transverse, with color images in the region of the hilum (mid) – 6 representative images each (including mid color), as follows:

→Longitudinal: Far lateral (should see some perinephric fat), lateral, mid (grayscale and color), medial, far medial (should see some perinephric fat)

→Transverse: High superior (should not see renal sinus), superior, mid (grayscale and color), inferior, low inferior (should not see renal sinus)

**\*\*Consider placing the patient prone if renal poles are difficult to fully visualize\*\***

-If hydronephrosis or pelvicaliectasis, provide AP pelvis measurement

→ At end of exam, assess if dilatation improves or resolves post-void

-If there is ANY complexity to a mass or cyst, provide CINE images

→ If mass is a cyst, must clearly show it to be anechoic, imperceptible wall and increased through-transmission (may need to turn off spatial compounding to show this)

NOTE: When there are multiple simple renal cysts, measure the 3 largest on each side

-If known stent in place:

→ Nephroureteral stent: attempt to visualize proximal coil (ideally in renal pelvis) and distal coil (ideally in bladder).

→ If known nephrostomy tube: attempt to visualize coil (ideally in renal pelvis).

→ If unable to visualize all or part of the stent, provide representative still images of attempt and CINE through relevant anatomy to document.

**\*\*Provide images of right kidney with liver**

**\*\*Provide images of left kidney with spleen**

**\*\*If indication is hematuria, transverse and longitudinal CINE through both kidneys (even if appear initially normal)\*\***

## **BLADDER:**

-Longitudinal and transverse of distended bladder always

-Lumen/wall abnormalities: provide CINE if abnormality is present; document if debris/mass is mobile or immobile by changing patient position; demonstrate color/spectral Doppler (or lack thereof)

-Evaluate distal ureter for dilatation or other abnormality

-Document ureteral jets – *please ensure adequate time is spent observing for jets before calling them absent*

-In men, measure prostate size and volume ONLY when indication is: urinary retention, urgency, or similar; OR, grossly enlarged

**\*\*WHEN should the patient void:**

(1) Indication = retention, urgency, UTI or similar; or, bladder VERY distended

-Void + pre/post volumes

(2) Hydronephrosis with full bladder seen at time of kidney imaging

-Void and re-assess if hydro persists afterward; pre/post volumes are NOT necessary

**PROSTATE (not all cases):**

-In men, measure prostate size and volume ONLY when indication is: urinary retention, urgency, or similar; OR, grossly enlarged (>30 mL).

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**RETROPERITONEAL VESSELS: *Only when NOT urinary tract indications, for example a Limited Retroperitoneal study for follow-up AAA.***

-All below vessels MUST be included for adequate billing IF the indication is NOT URINARY TRACT RELATED

-Aorta

- Representative images and measurements (proximal, mid, distal)
- Provide maximum dimension on worksheet
- Document atherosclerotic plaque, aneurysm, etc.

-IVC

- With color
- Does not need to be measured

-Common iliac artery origins

\*\*\* Note: Evaluation of renal artery hypertension is a vascular study, and this protocol does not apply. \*\*\*