Procedure Name: **Renal and/or Renal Transplant**

Updated 10/18/2018

Indications:

May include but not limited to abdomen pain, hematuria, hypertension, palpable or suspected masses, follow up to prior exam, or any other valid medical reason. There are no absolute contraindications.

General Description:

This is a survey for renal and/or renal transplant.

Patient Preparation:

One hour prior to start of exam patient to drink 24 oz. of liquid

Equipment Selection and Settings:

Select ABD or Renal from preset menu

A curvilinear transducer will be used for most patients. The sonographer should use the preprogrammed setting for the appropriate body part and adjust gain, depth and transmit zone settings to optimize images. Fill out any applicable impression or worksheet upon completion of exam.

Imaging Sequence:

The following imaging sequence is for a normal exam. Include additional images of pathology to demonstrate dimensions in three planes, texture, size, shape, and relationship to adjacent anatomy. Utilize color Doppler as needed.

1. Image patient data (demographics page).

RT KIDNEY

2. Long mid RT kidney (length measurement).
3. Transverse RT kidney (TRANS and AP measurements)
4. Long RT kidney lateral
5. Long RT kidney medial
6. Long RT kidney mid with color Doppler for perfusion
7. Trans RT kidney superior
8. Trans RT kidney inferior
9. If visible, evaluate ureter

LT KIDNEY

10. Long mid LT kidney (length measurement).
11. Transverse LT kidney (TRANS and AP measurements)
12. Long LT kidney lateral
13. Long LT kidney medial
14. Long LT kidney mid with color Doppler for perfusion
14. Trans LT kidney superior
15. Trans LT kidney inferior
17. If visible, evaluate ureter

Urinary bladder

18. LONG mid bladder
19. LONG RT lateral bladder
20. LONG LT lateral bladder
21. TRANS superior bladder
22. TRANS inferior bladder
23. If physician orders post void volume, need to measure bladder for both pre- and post-void volume (volume is calculated by 3 dimensional measurements)

LONG AORTA through bifurcation

LONG IVC

Renal transplant

If exam ordered is for renal transplant, then above (renal) procedure is performed for native kidneys as well as the following additional images for the transplant kidney.

1. Long mid transplant (length measurement).
2. Transverse mid transplant (TRANS and AP measurements)
3. Long transplant lateral
4. Long transplant medial
5. Long transplant mid with color Doppler for perfusion
6. Trans transplant superior
7. Trans transplant inferior
8. If visible evaluate ureter
9. Measure resistive index (RI) of segmental arteries at:
    - Upper pole
    - Mid pole
    - Lower pole

   Normal waveform is low resistance, brisk upstroke and continuous diastolic flow. RI should be .6 - .8.
10. Measure PSV (angle corrected) in main renal artery at proximal, mid and distal (should be <200 cm/sec, provided iliac artery is normal).
11. Color and spectral Doppler of main renal vein
12. Color Doppler and PSV (angle corrected) of iliac artery proximal to anastomosis of transplant renal artery.
13. Image for presence of perirenal fluid.