Procedure Name: Renal Artery Stenosis

Updated: 2/22/18, approved 9/2011

Indications:
May include but not limited to hypertension that is difficult to control with medical treatment, pt unable to tolerate gadolinium injections due to compromised renal function, follow up to prior exam, or any other valid medical reason. There are no absolute contraindications.

General Description:
This is a screening for renal artery stenosis.

Patient Preparation:
NPO for 6-8 hrs.

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 flow to aid in the determination of any possible abnormality and to demonstrate blood flow.

1. Patient demographics page

Aorta

2. Long aorta through bifurcation
3. Color Doppler at level of renal arteries
4. Angle corrected spectral Doppler velocity measurement at level of renal arteries

IVC

5. Long IVC

Right Kidney

6. Long with length measurement
7. Long views to include medial, mid and lateral images
8. Transverse with AP and width measurements
9. Transverse views to include upper, mid and lower poles
10. Renal vein with color and spectral Doppler
11. Main renal artery with color
12. Renal artery distal with color and angle corrected spectral Doppler with velocity measurement

13. Renal artery mid with color and angle corrected spectral Doppler with velocity measurement
14. Renal artery origin with color and angle corrected spectral Doppler with velocity measurement
15. Upper segmental artery with color and spectral Doppler and resistive index measured
16. Mid segmental artery with color and spectral Doppler and resistive index measured
17. Lower segmental artery with color and spectral Doppler and resistive index measured

Left Kidney

18. Long with length measurement
19. Long views to include medial, mid and lateral images
20. Transverse with AP and width measurements
21. Transverse views to include upper, mid and lower poles
22. Renal vein with color and spectral Doppler
23. Main renal artery with color
24. Renal artery distal with color and angle corrected spectral Doppler with velocity measurement
25. Renal artery mid with color and angle corrected spectral Doppler with velocity measurement
26. Renal artery origin with color and angle corrected spectral Doppler with velocity measurement
27. Upper segmental artery with color and spectral Doppler and resistive index measured
28. Mid segmental artery with color and spectral Doppler and resistive index measured
29. Lower segmental artery with color and spectral Doppler and resistive index measured

Report Page

Scanning tips:

- Use general or high flow for color imaging of aorta and renal artery
- Use low flow for color imaging of intrarenal arteries
- Careful attention should be taken to optimize color Doppler settings so the renal artery and aorta do not have erroneous aliasing
- Doppler angles should always be corrected to 60 degrees or less when measuring velocity
- PW scale must be adjusted so the waveform fills as much of the scale as possible without aliasing
- Normal waveform is low resistance with brisk upstroke and continuous diastolic flow
- Normal resistive index is <.70 and normal PSV in the main renal artery is <150cm/sec