

Rad Lab 4 Unknowns: Genitourinary

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Case I: 69 year old male with recurrent urinary tract infections

- Name two ways we know that this study was performed with intravenous contrast?
- Identify the abnormality.
- How did this abnormality occur?
- What are the low attenuation and the high attenuation areas in the kidneys?

CASE I



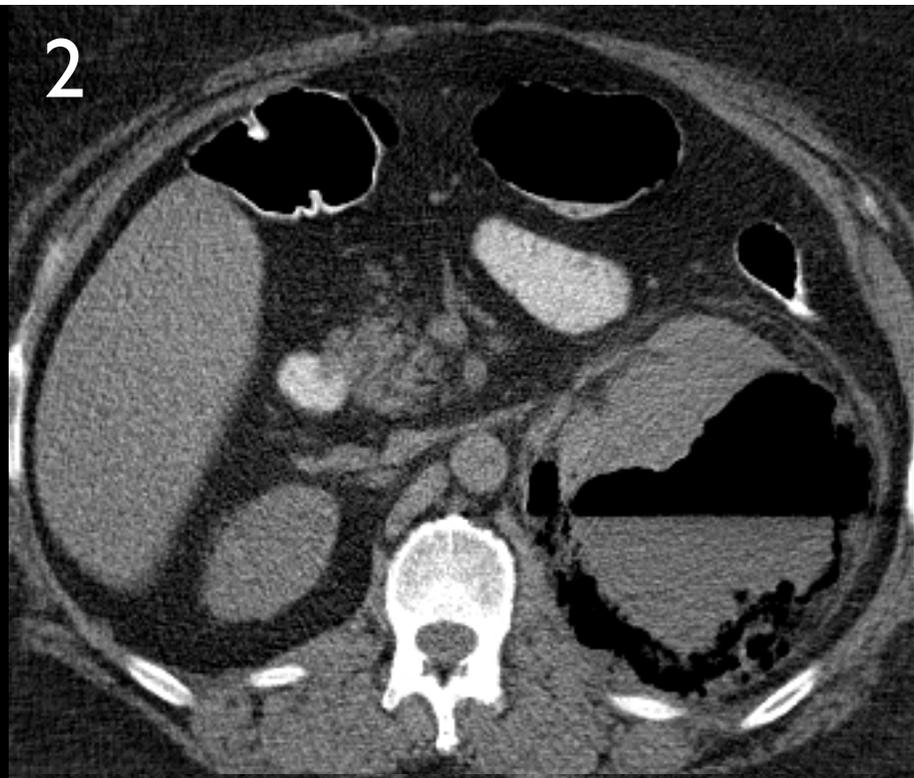
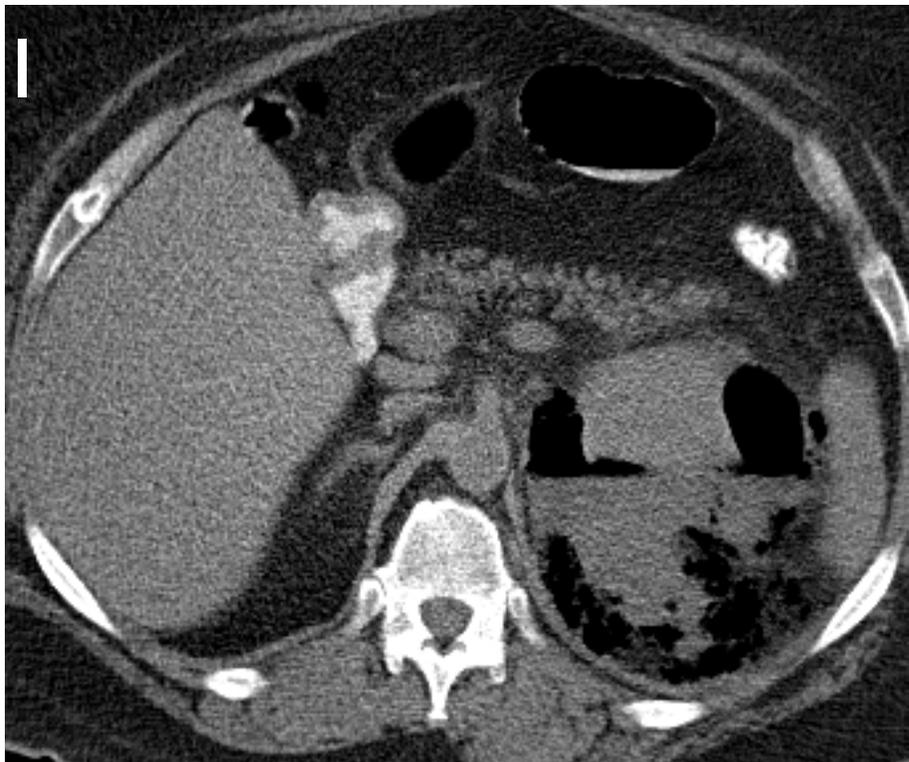
CASE I



Case 2: 70 year old diabetic male with fever and flank pain

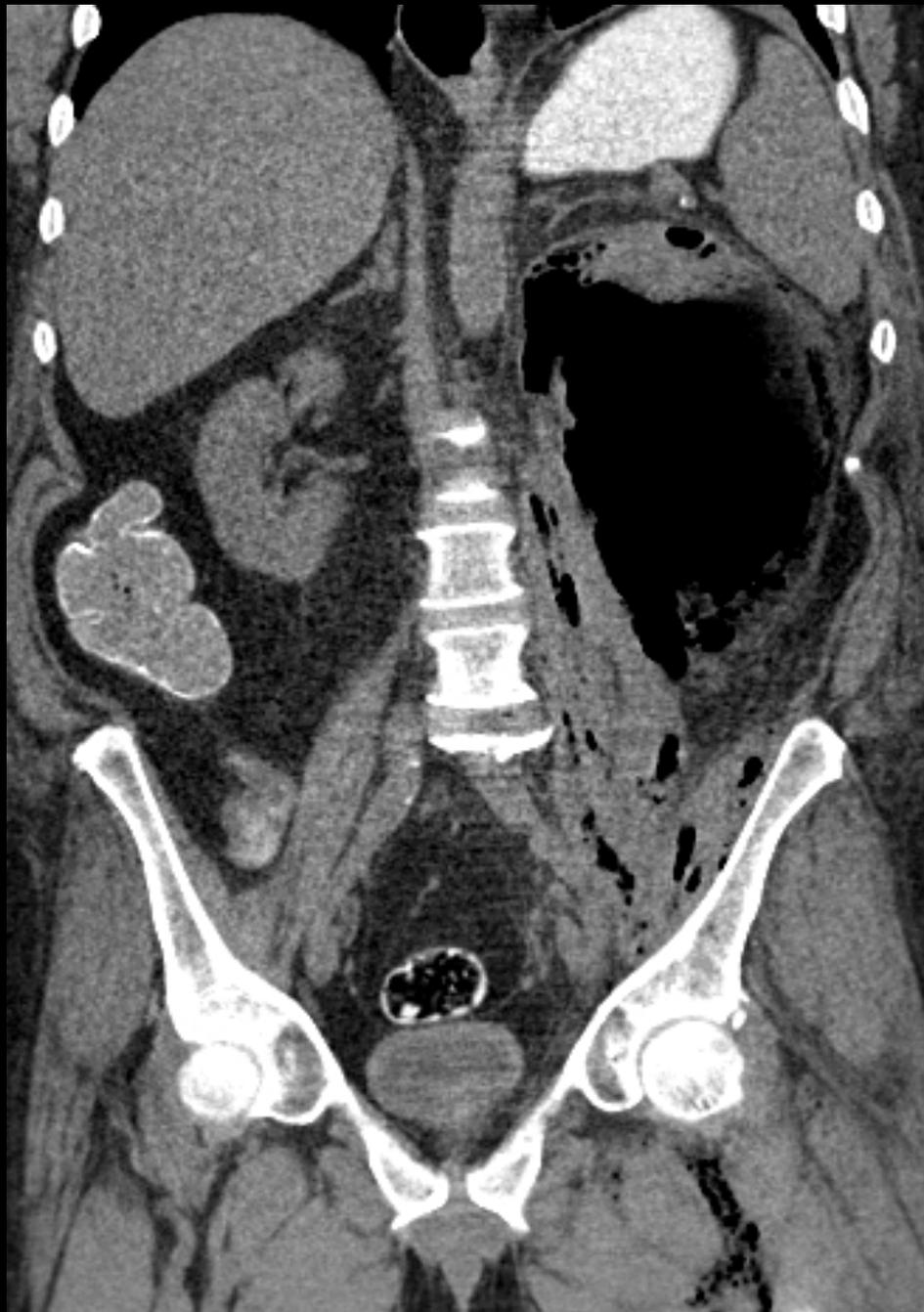
- Would you use intravenous contrast for this patient and why? What was done in this case?
- Do you see an air-fluid level? Where is it? Is there abnormal gas in other places?
- Your diagnosis?

CASE 2



CASE 2

These images were obtained from the same study. What plane are we looking at?



Identify any abnormal gas.

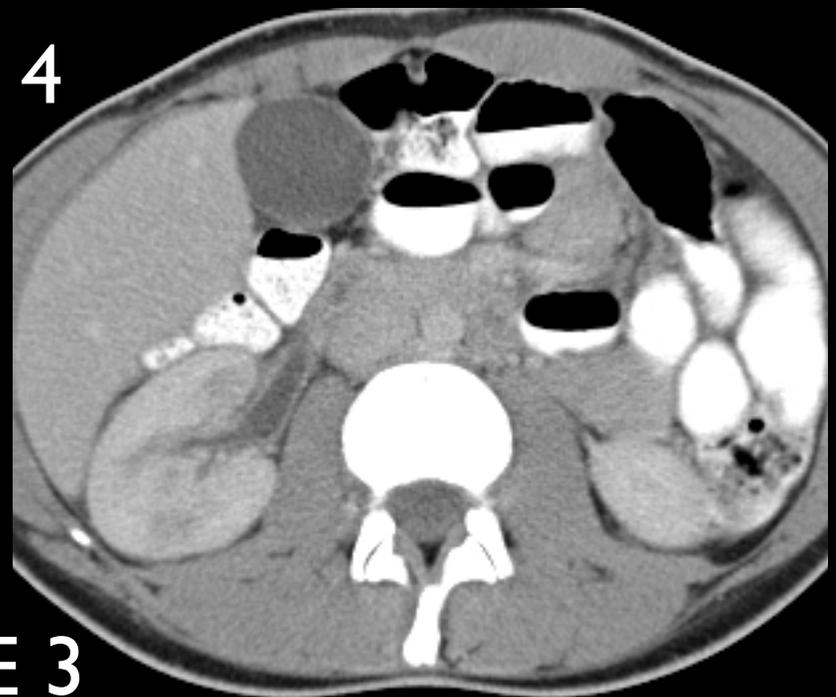
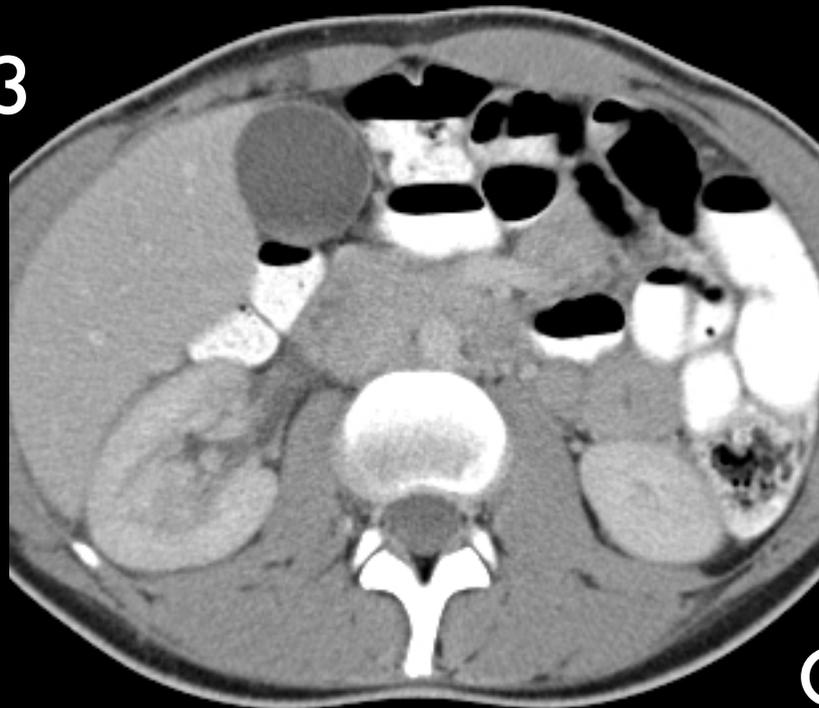
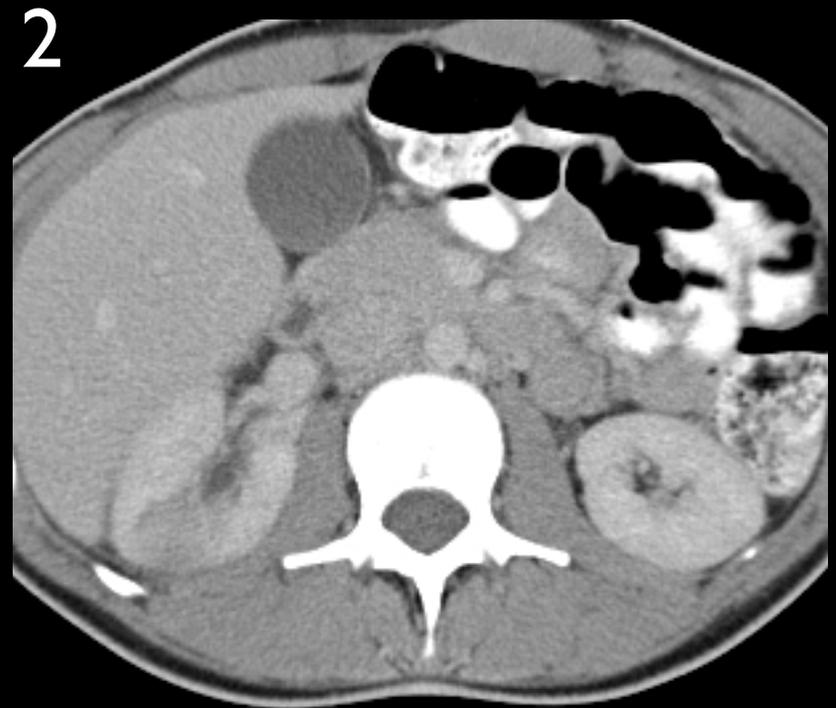
Point out any muscle with abnormal gas.

CASE 2

Case 3: 32 year old, otherwise healthy woman with fever and flank pain

- Why do these kidneys enhance more uniformly than in Case 1?
- Which flank hurt?
- Identify any area of abnormal enhancement, and explain its appearance.

CASE 3



CASE 3



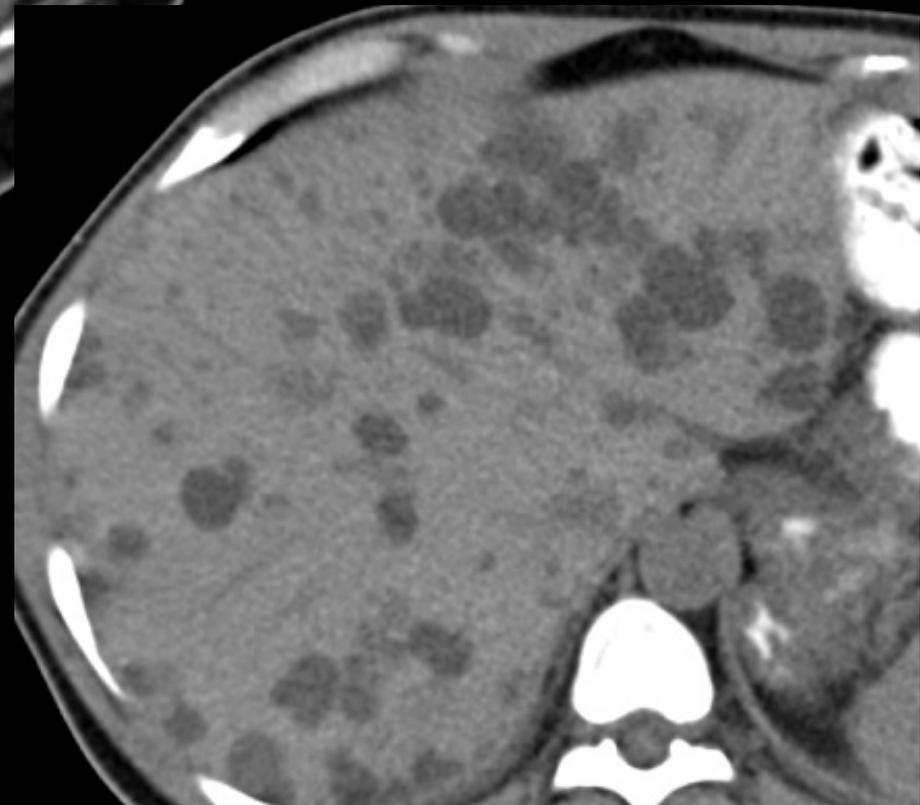
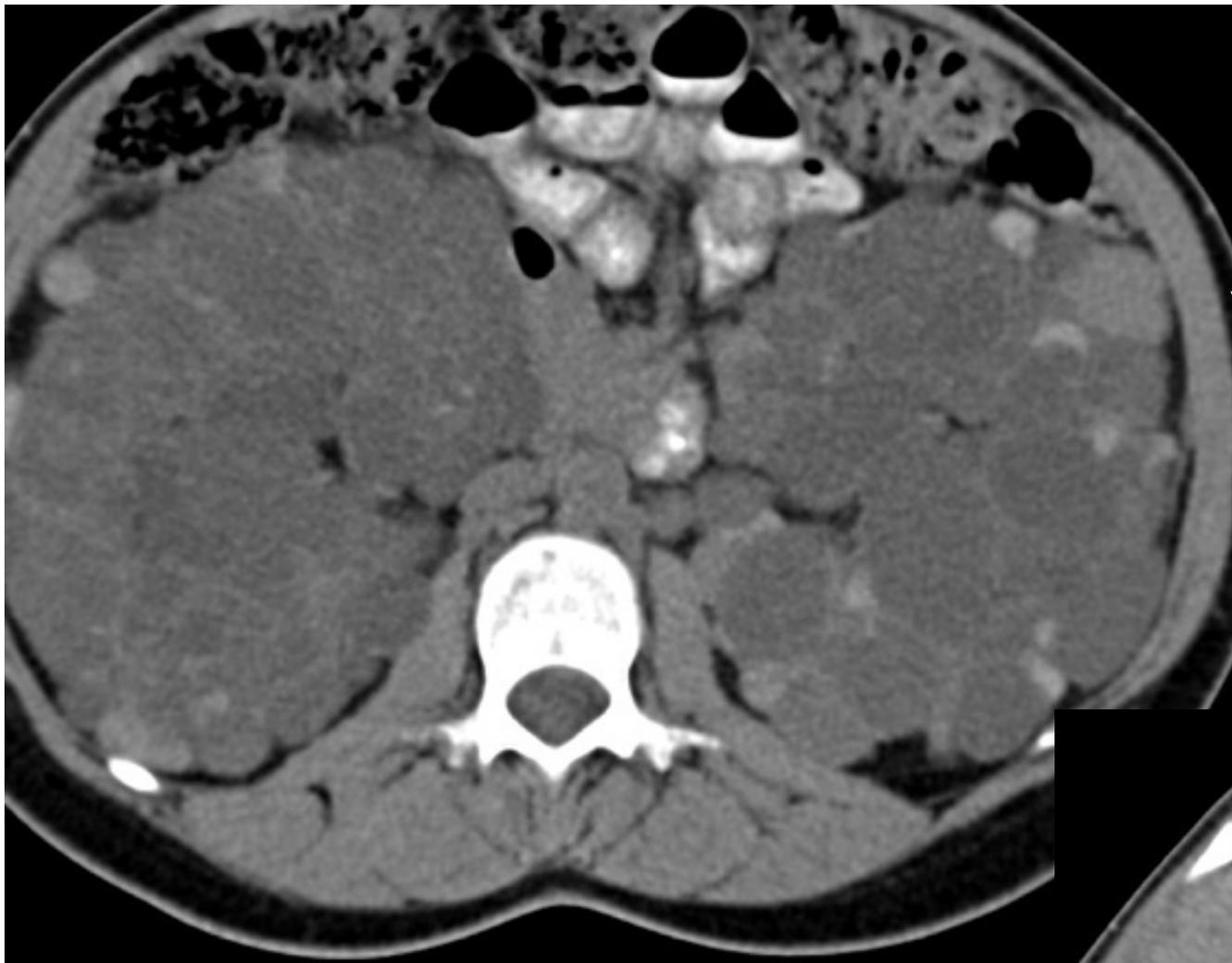
coronal reconstruction
CASE 3

Case 4: 53 year old woman with progressive renal failure

- Identify the kidneys. Are they normal in size or attenuation? Are there discrete areas of abnormality?
- Does the appearance of the liver “narrow” your differential diagnosis?
- What is the difference in appearance between a cyst and a solid lesion?

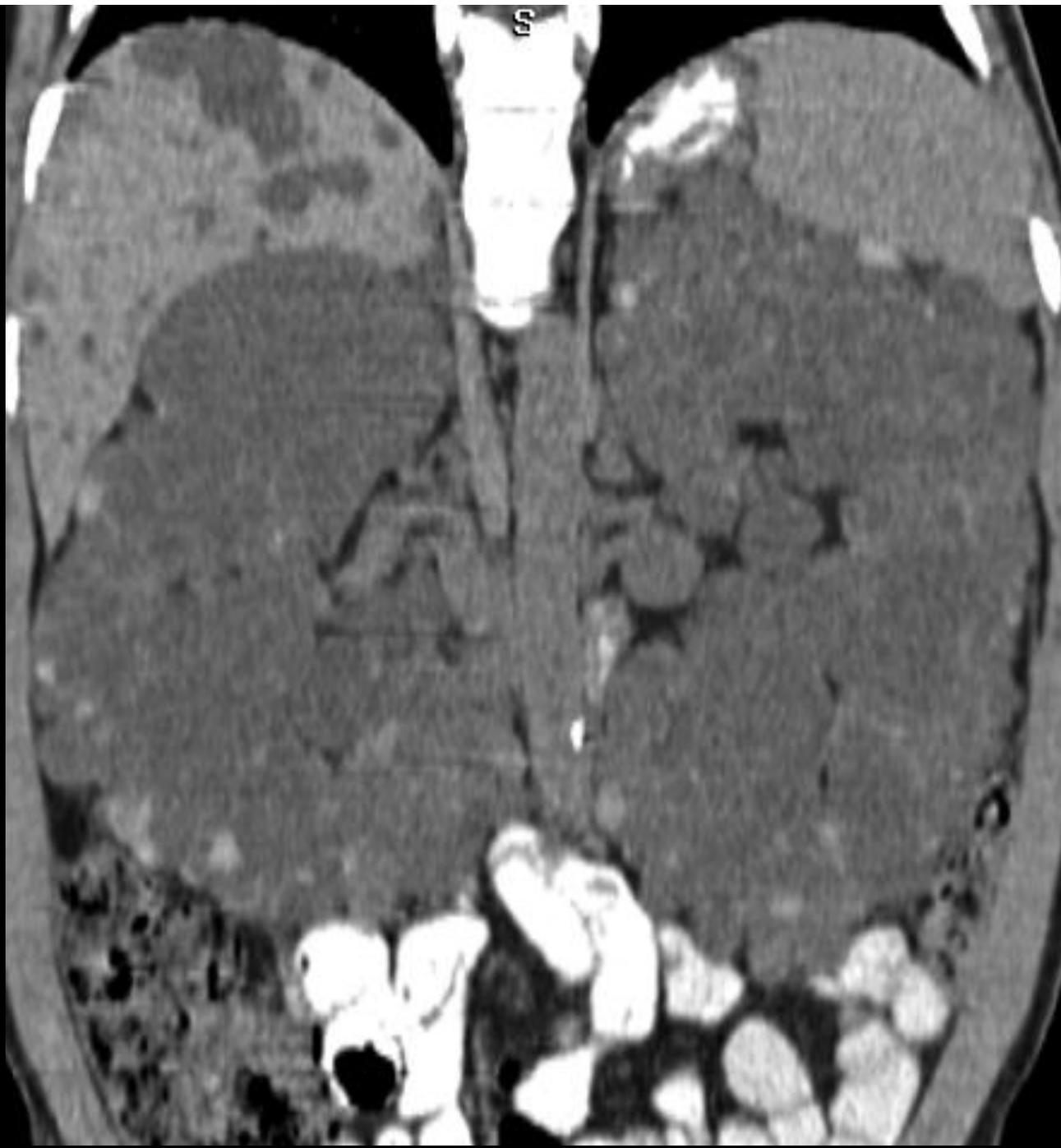
CASE 4

Clue: compare
lesion attenuation
with that of muscle,
spleen, or liver.



CASE 4

coronal
reconstruction

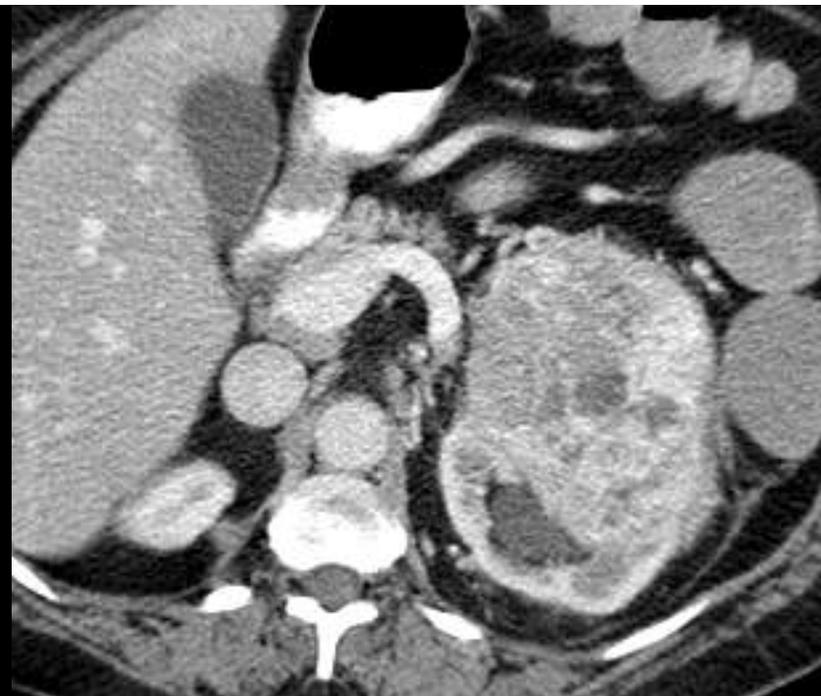


CASE 4

Case 5: 80 year old woman with hematuria and weight loss

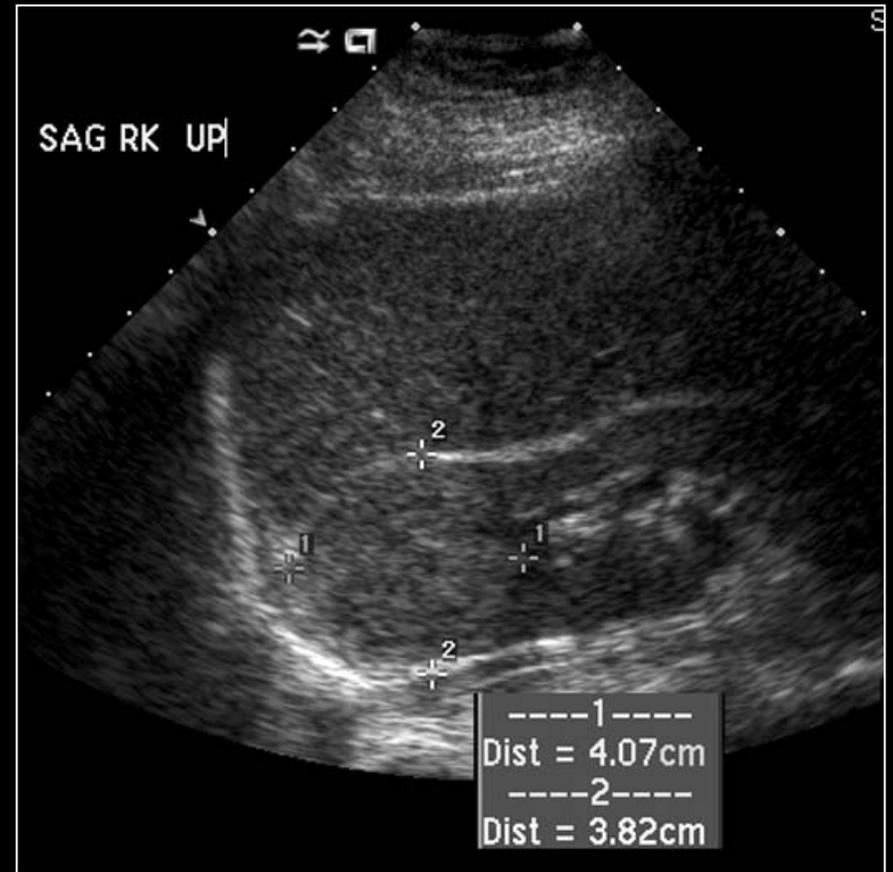
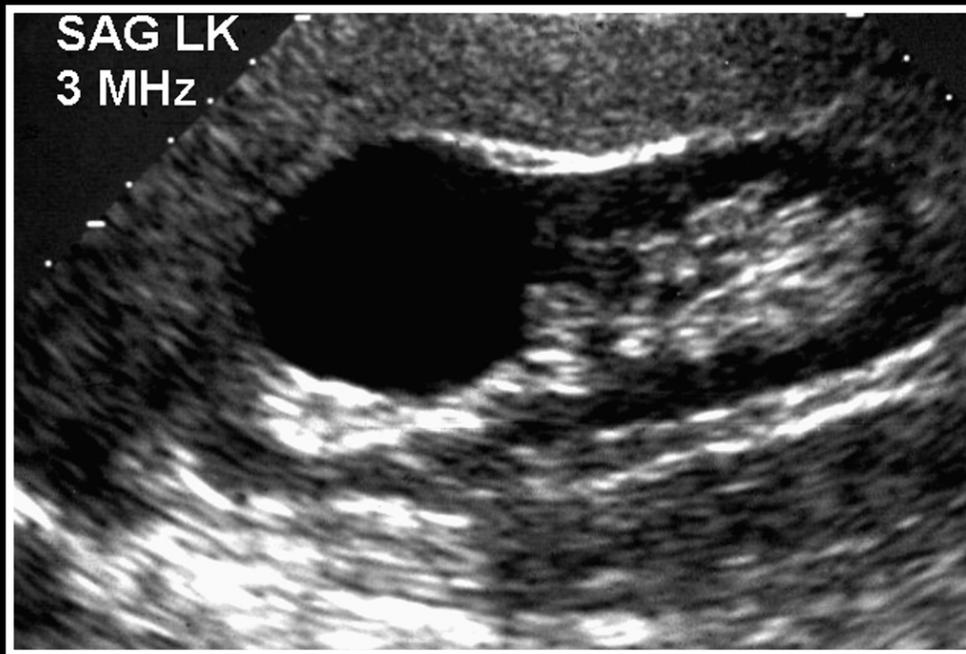
- Identify the abnormality. Name ways in which its appearance is different from that of a simple cyst.
- Your diagnosis?
- What does that area of low attenuation in the center of the lesion indicate pathologically and physiologically? How is this area different from a simple cyst?

CASE 5

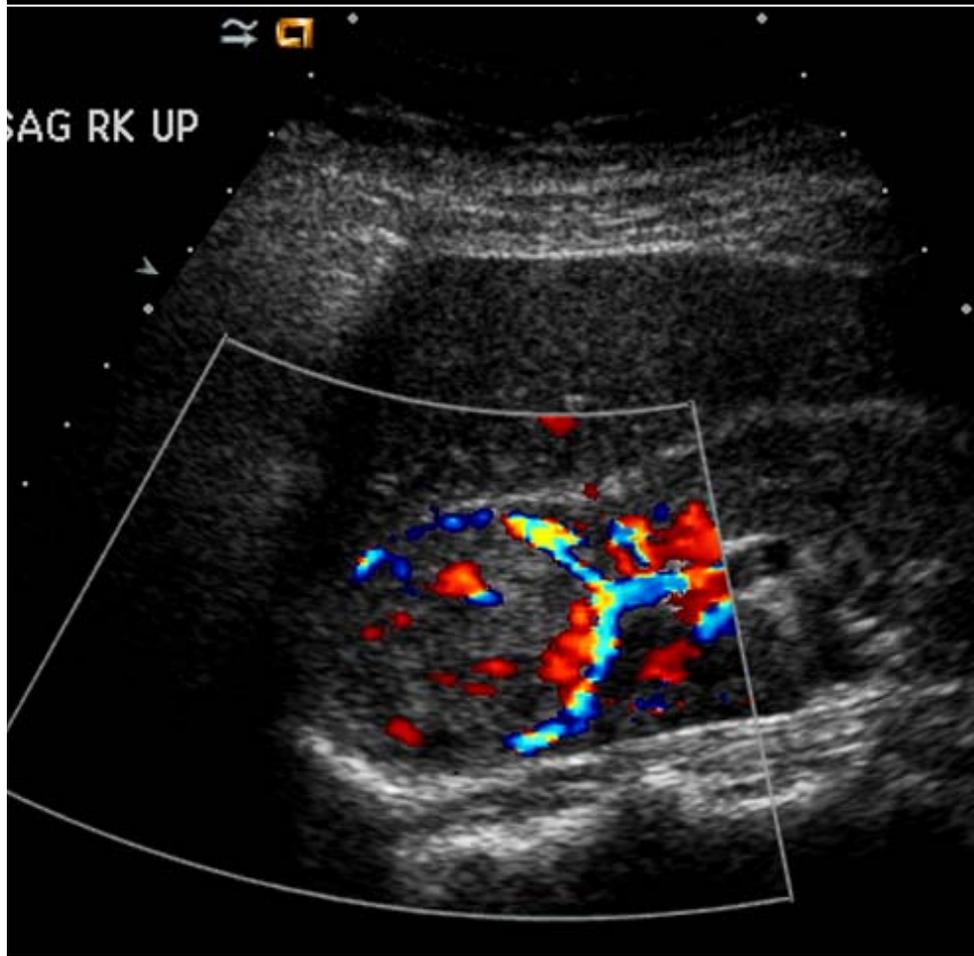


CASE 5

2 different patients with renal masses, one benign, the other malignant



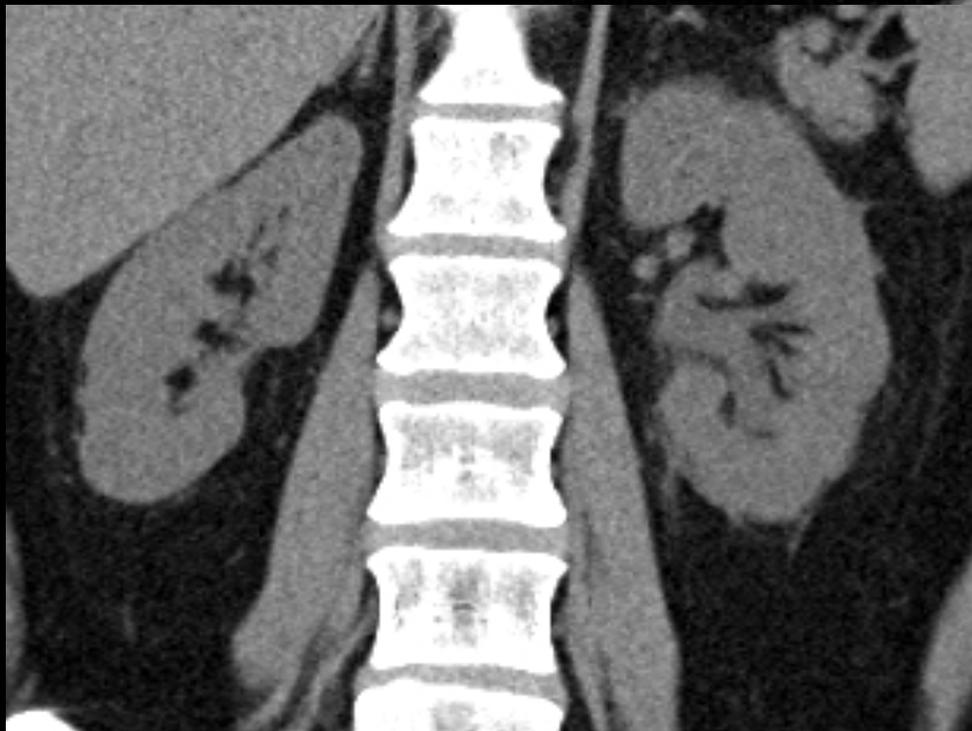
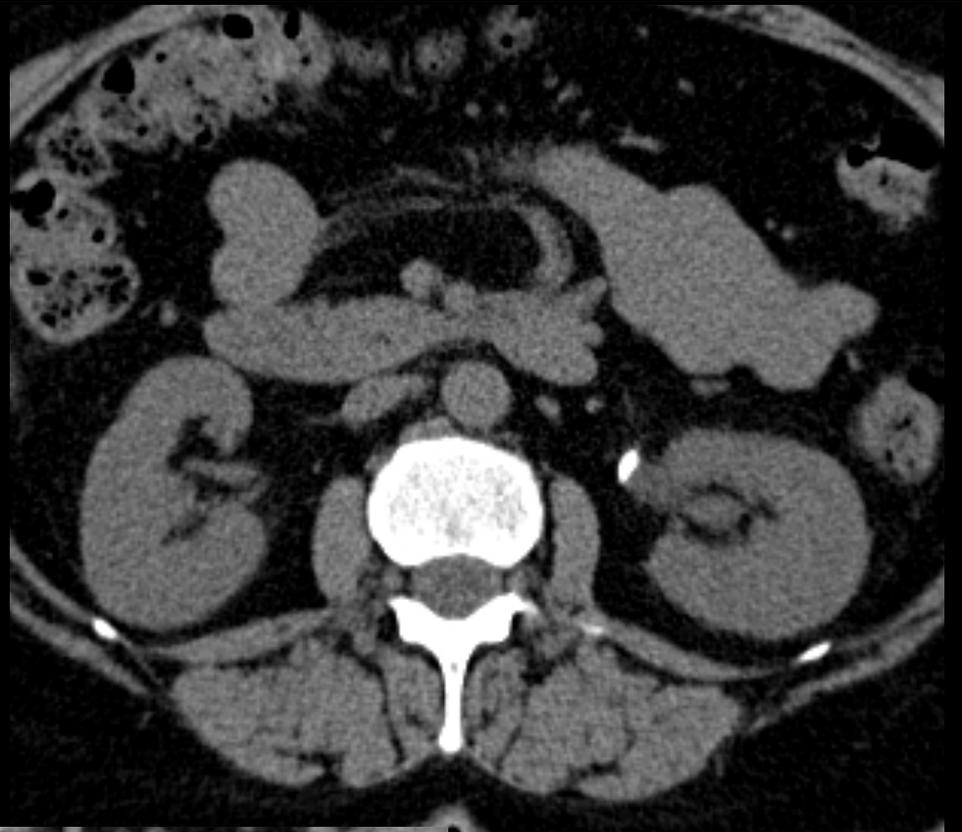
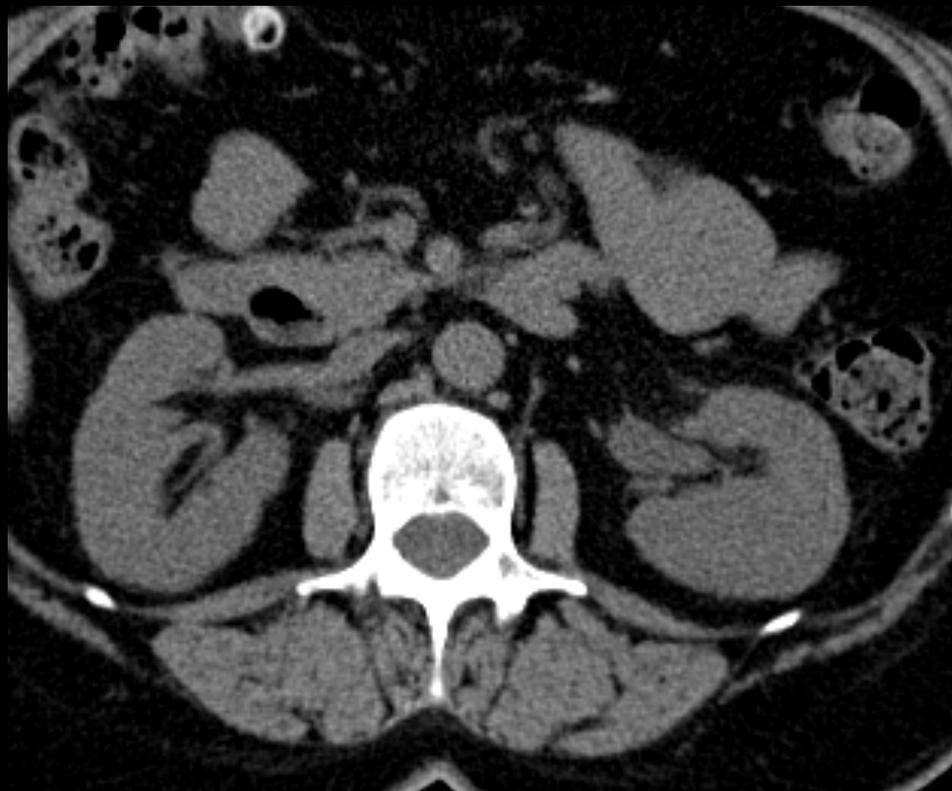
What ultrasound features distinguish these masses?



How can color Doppler help distinguish benign from malignant renal masses?

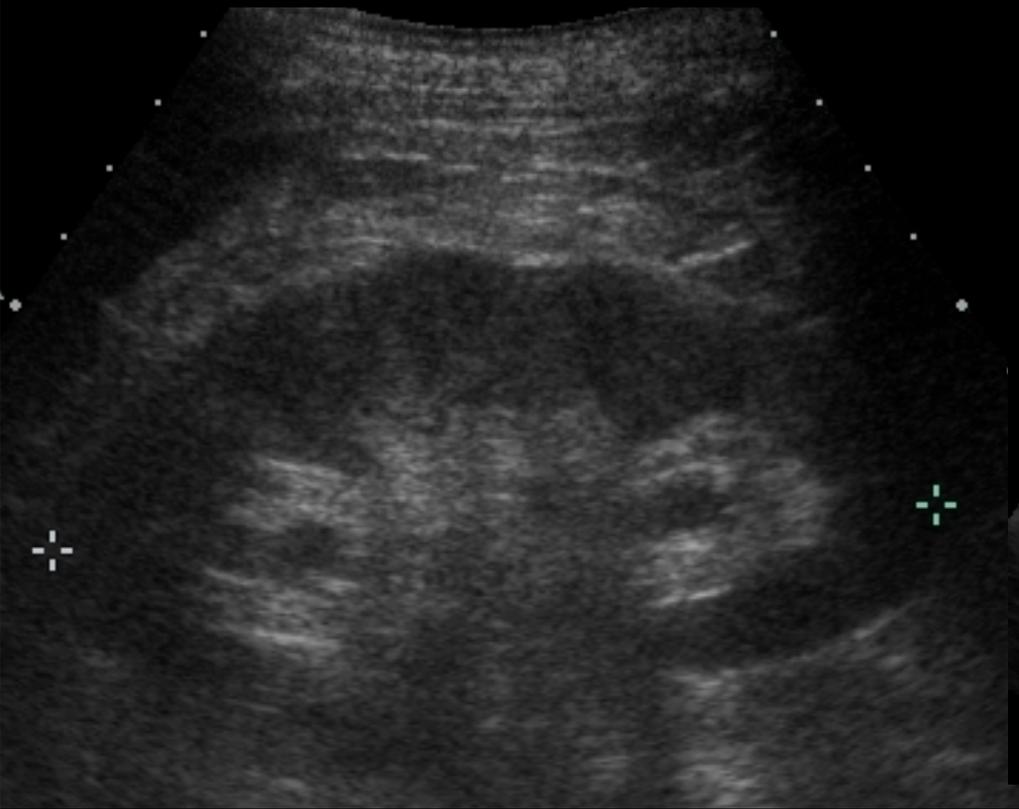
Case 6. Young man with sudden onset of severe flank pain and hematuria

- You suspect an obstructing kidney stone. Would you perform the study with or without IV contrast, and why?
- Identify the collecting systems of both kidneys. How are they different? Which flank hurt?
- Identify the cause of the obstruction.

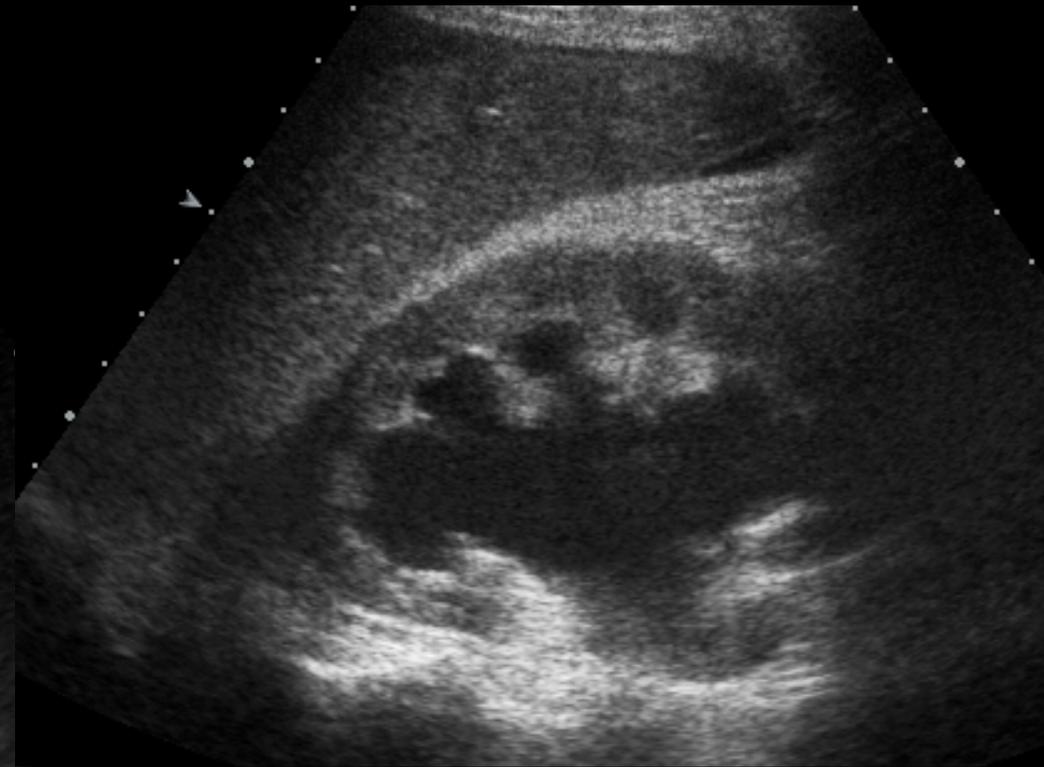


CASE 6

These renal sonograms are from a 25 yo woman with identical complaints. You learn her LMP was 5 weeks ago



RK



LK

Compare carefully the renal pelvis and calyces from each kidney. Do you see any differences?

How would you proceed with management?

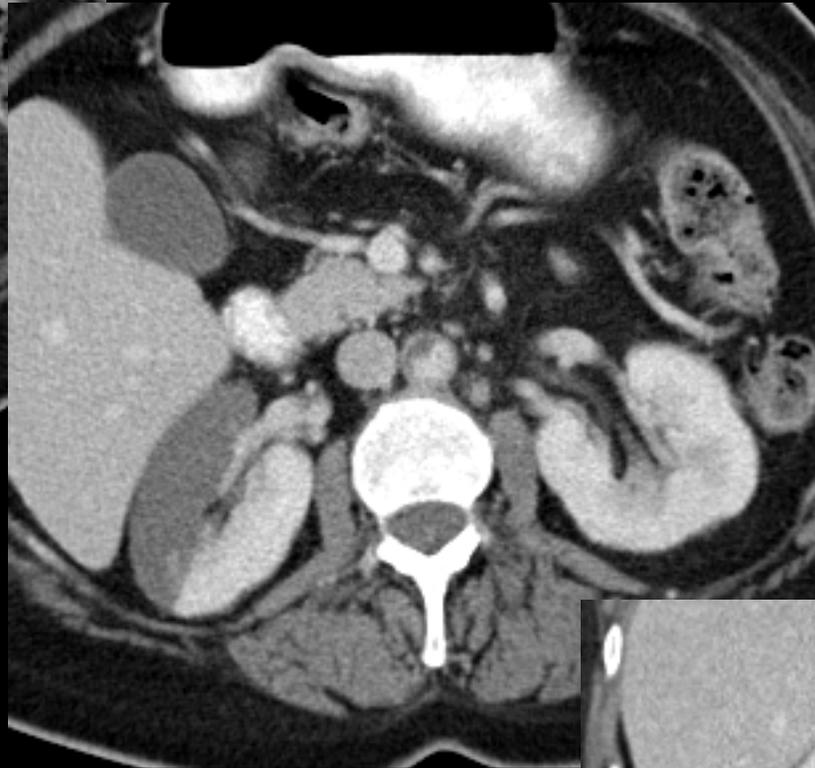
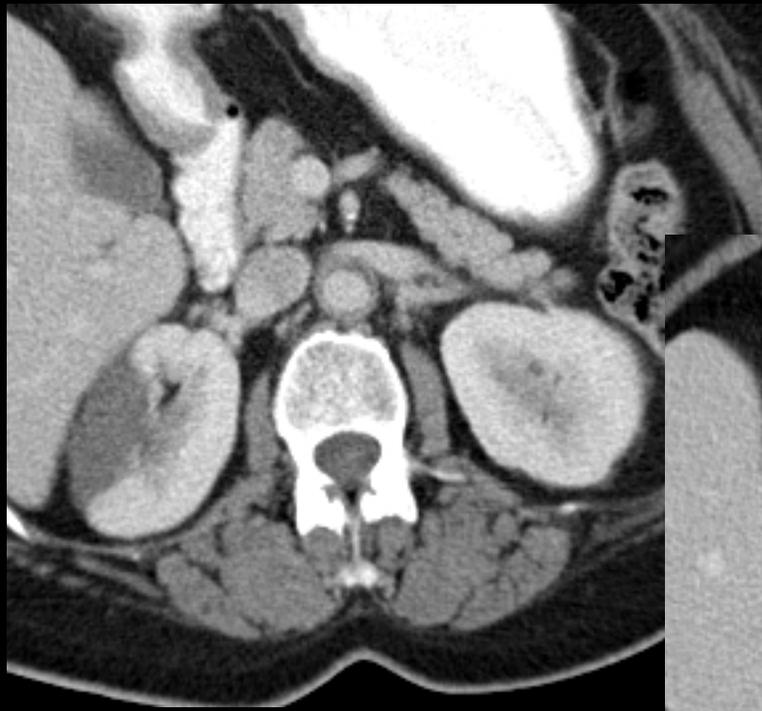


This is an image obtained through the bladder trigone slightly to the left of midline. The echogenic structure between the cross hairs is a stone. Where is it located? Why is the sonogram preferable in this instance?

Case 7: 60 year old male with atrial fibrillation, flank pain, no fever

- Identify the abnormality. Would it have been easily seen without intravenous contrast. Why or why not?
- How does the shape of the areas of abnormal enhancement help in the differential diagnosis
- What is the diagnosis? What could have caused this?

CASE 7



CASE 7

Identify
the aorta
and any
evidence
of
vascular
disease.



Any
evidence for
prior
surgery?

CASE 7

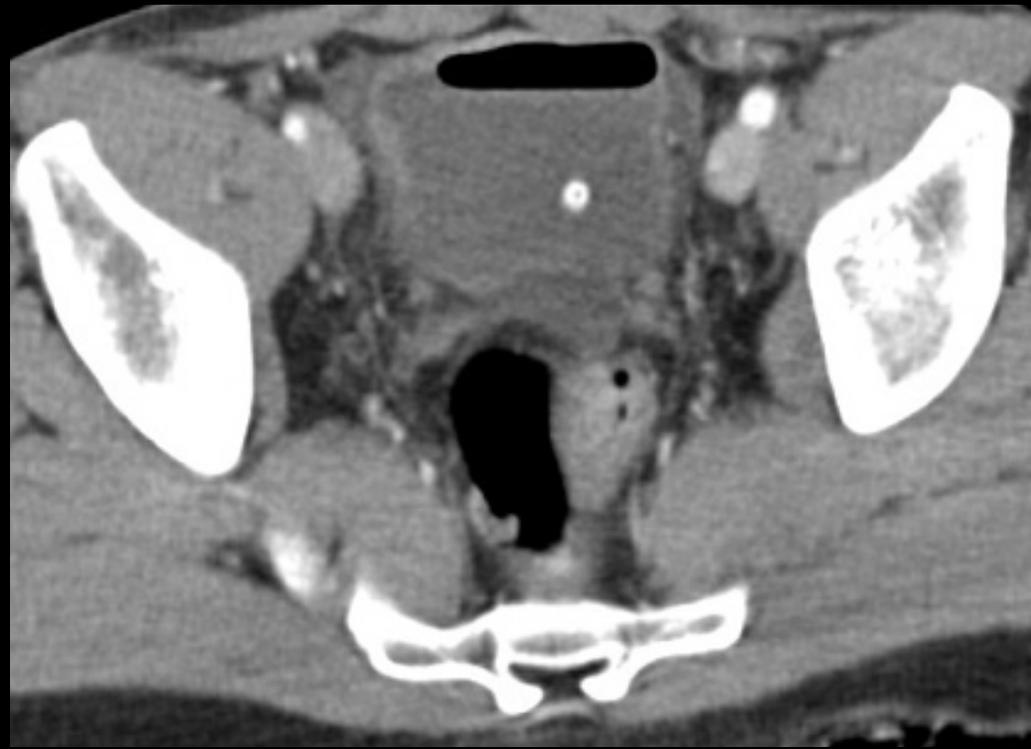
Case 8: 19 year old intoxicated female in a roll-over motor vehicle accident

- Identify any free fluid. What type of fluid could this be, especially with this history?
- Can you identify the bladder “foley” catheter? How does the fluid in the bladder compare with the free fluid?
- Contrast material was introduced into the bladder, and the second set of images taken. What happened to the bladder?

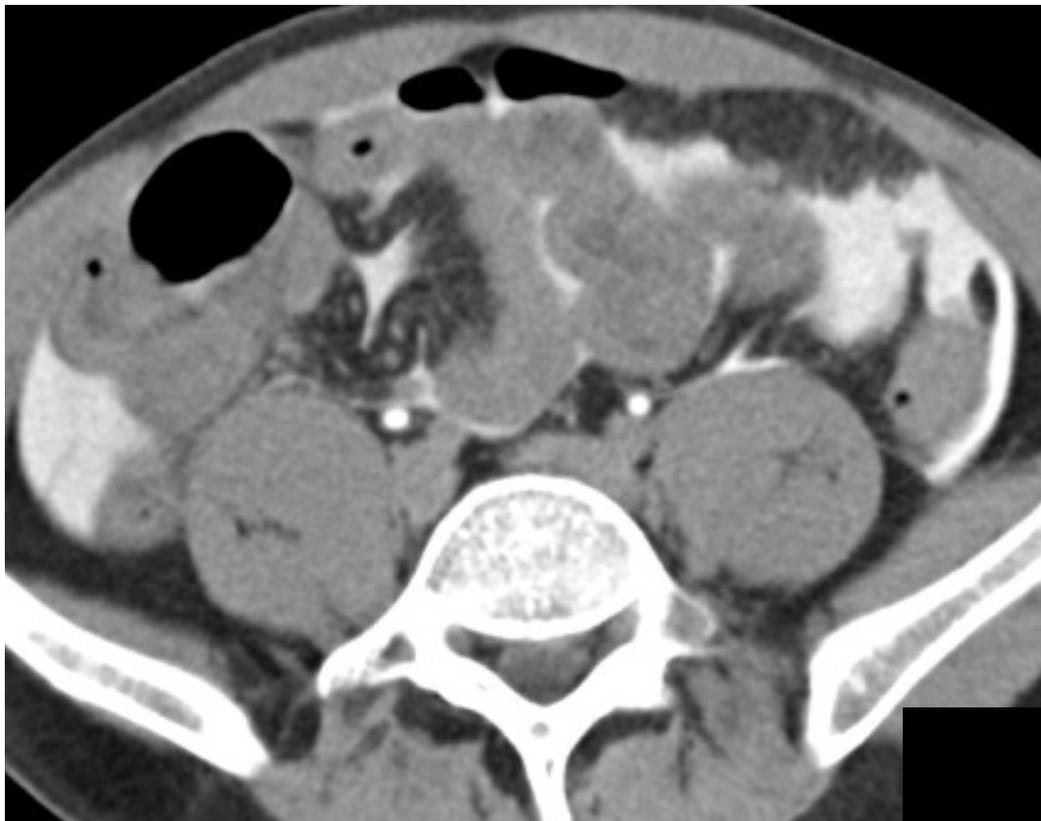
CASE 8



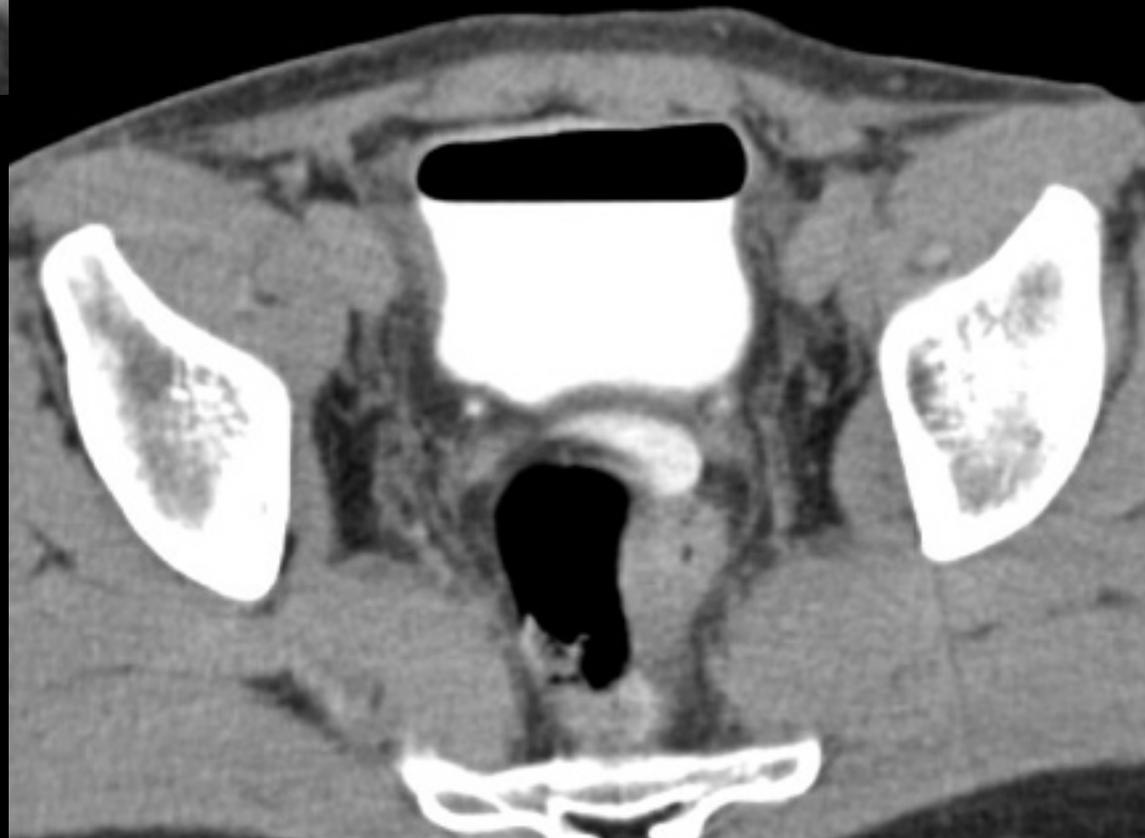
before contrast administration



CASE 8



after a "cystogram"

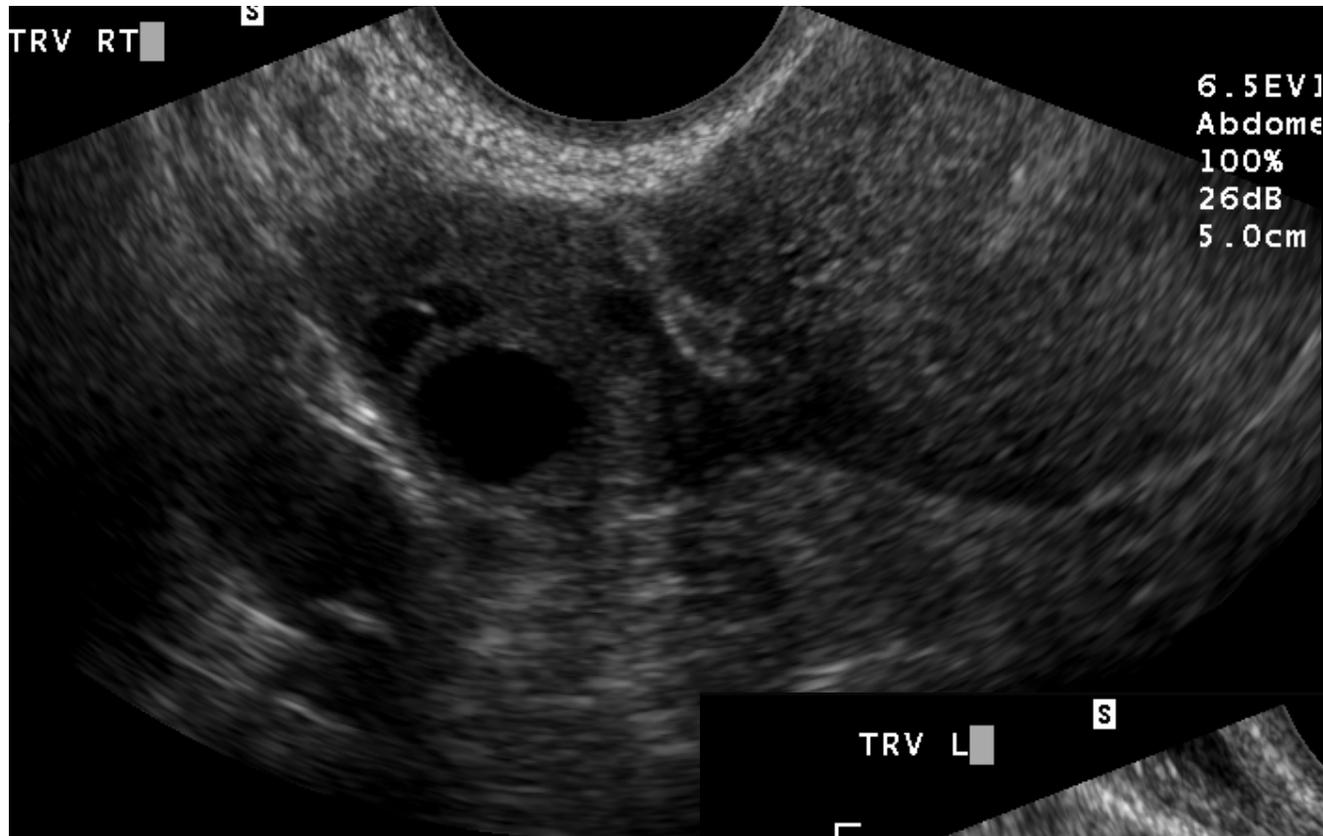


CASE 8

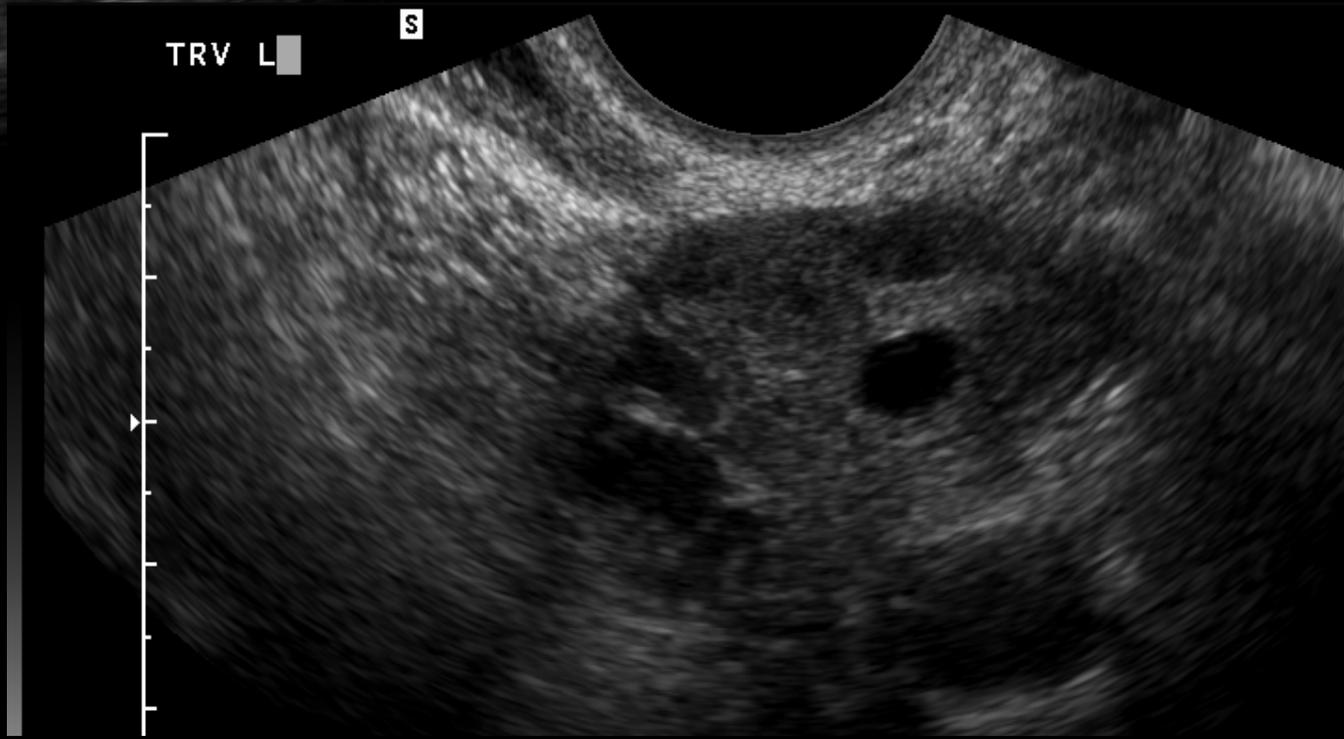
Case 9: 29 yr old woman with pelvic discomfort

- What type of imaging would you first order?
- Look at the normal pelvic organs from a different patient, then the images from this patient
- What other history would you like to obtain?

CASE 9

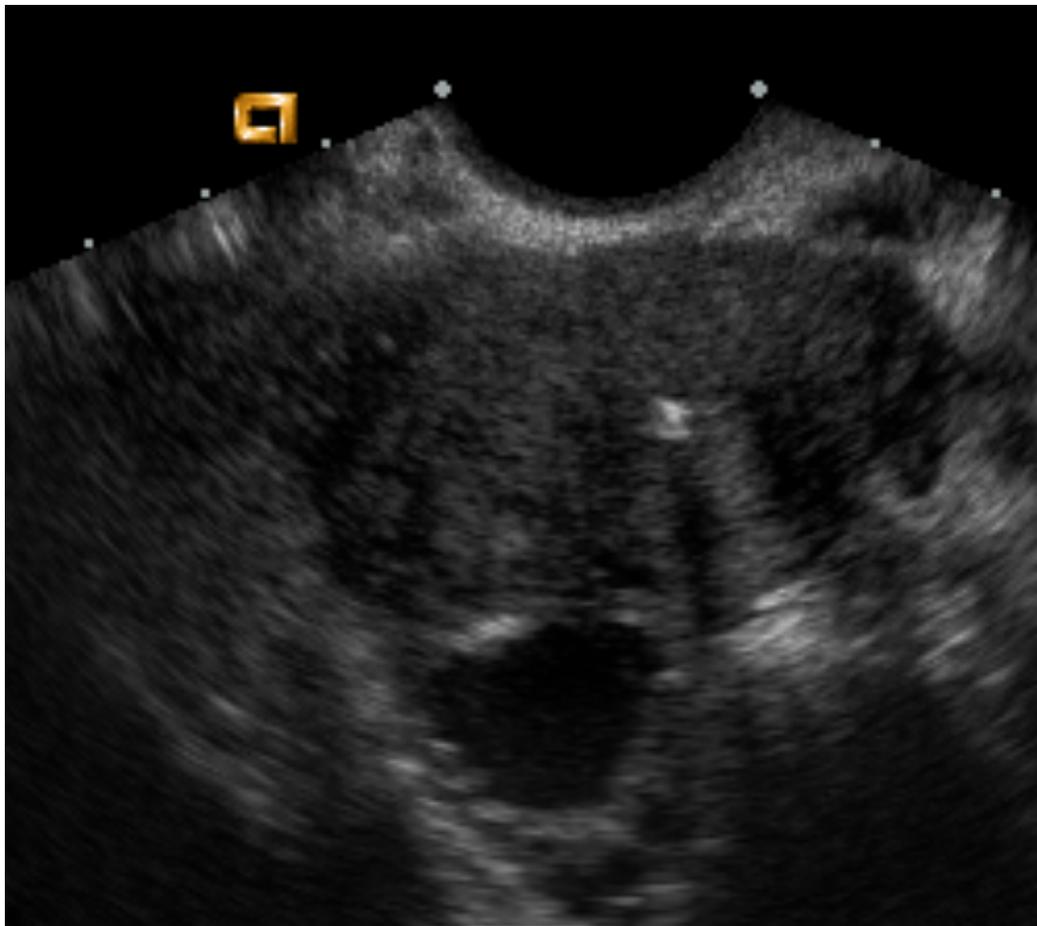


Normal uterus
right ovary

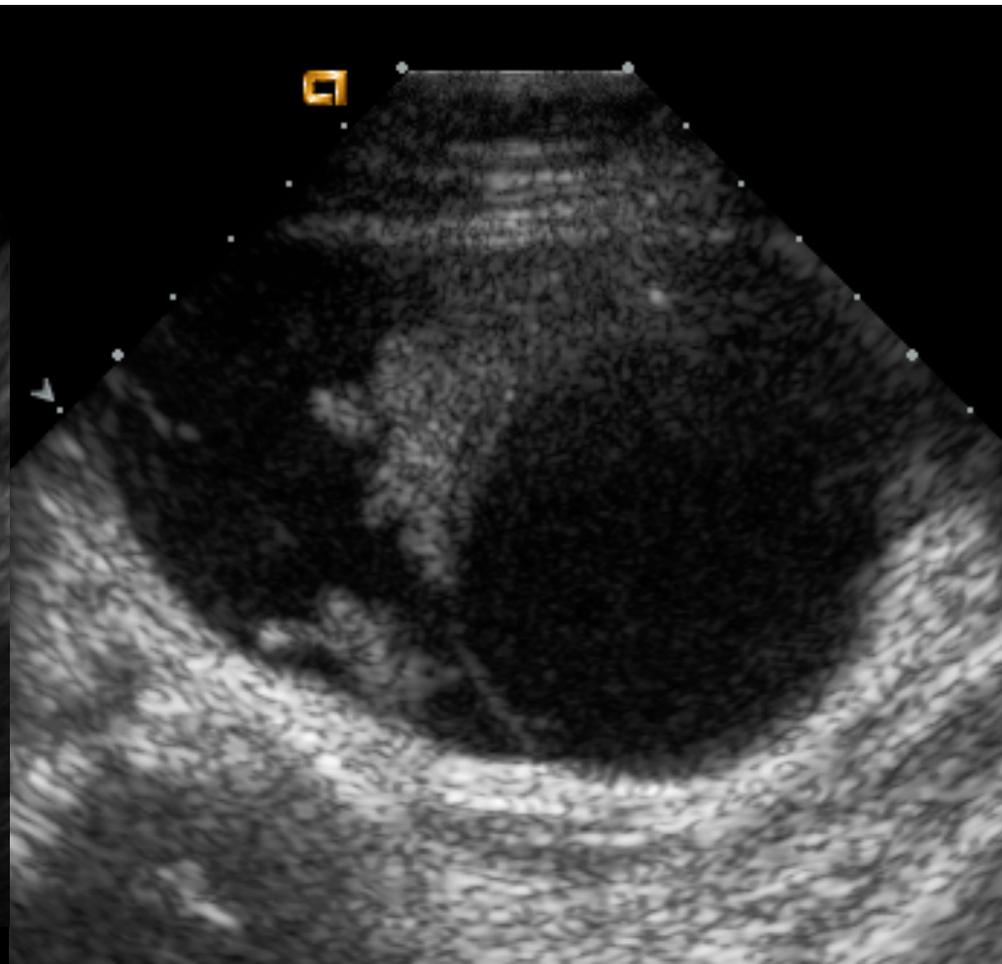


Normal left
ovary

What type of exam is this and how is it done?



Patient's right ovary

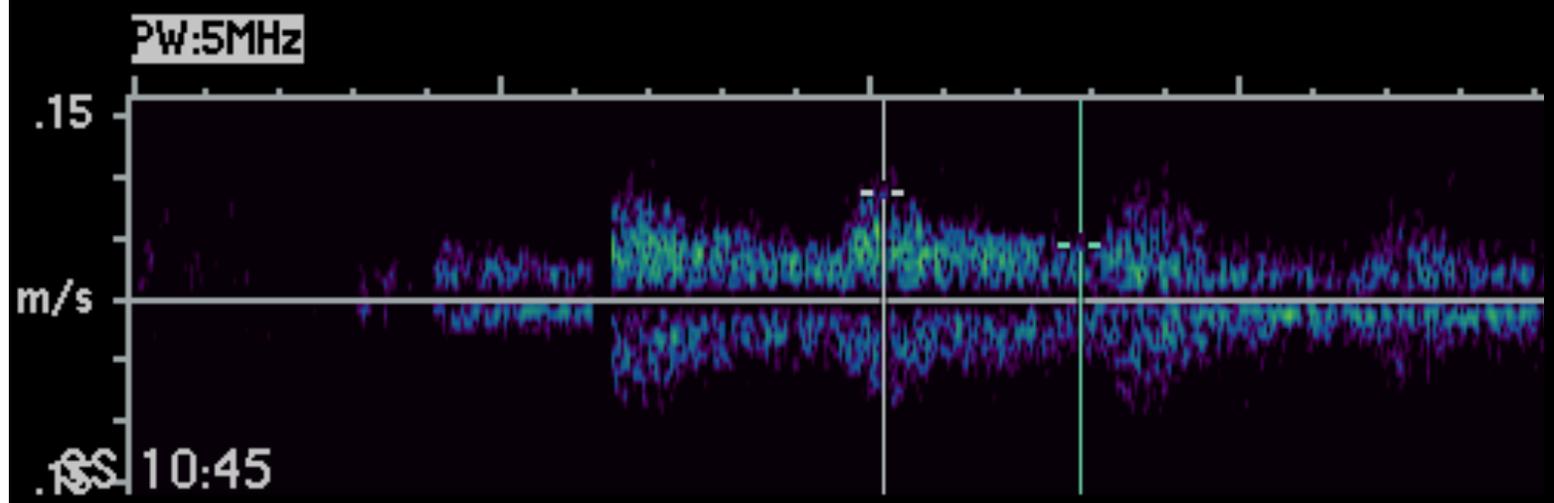
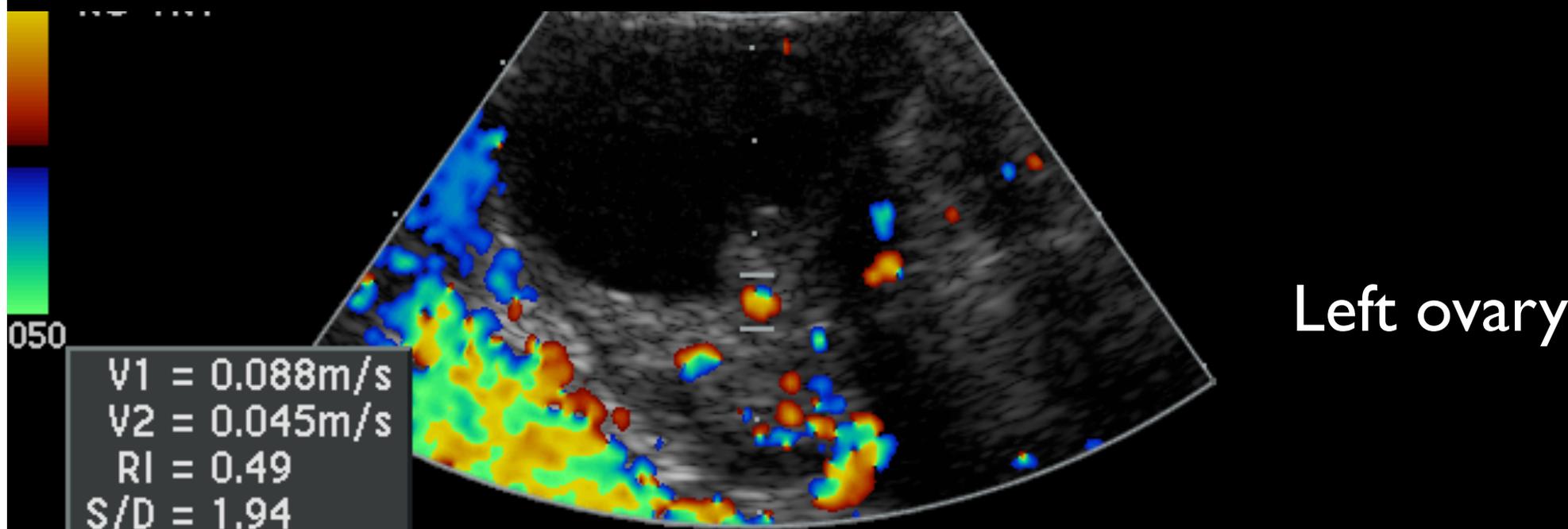


Patient's left ovary

Comparing these to the previous normal images, which ovary do you suspect may be abnormal and why?

Hint: review the pelvic CT image, case 7, Radlab 3!

CASE 9

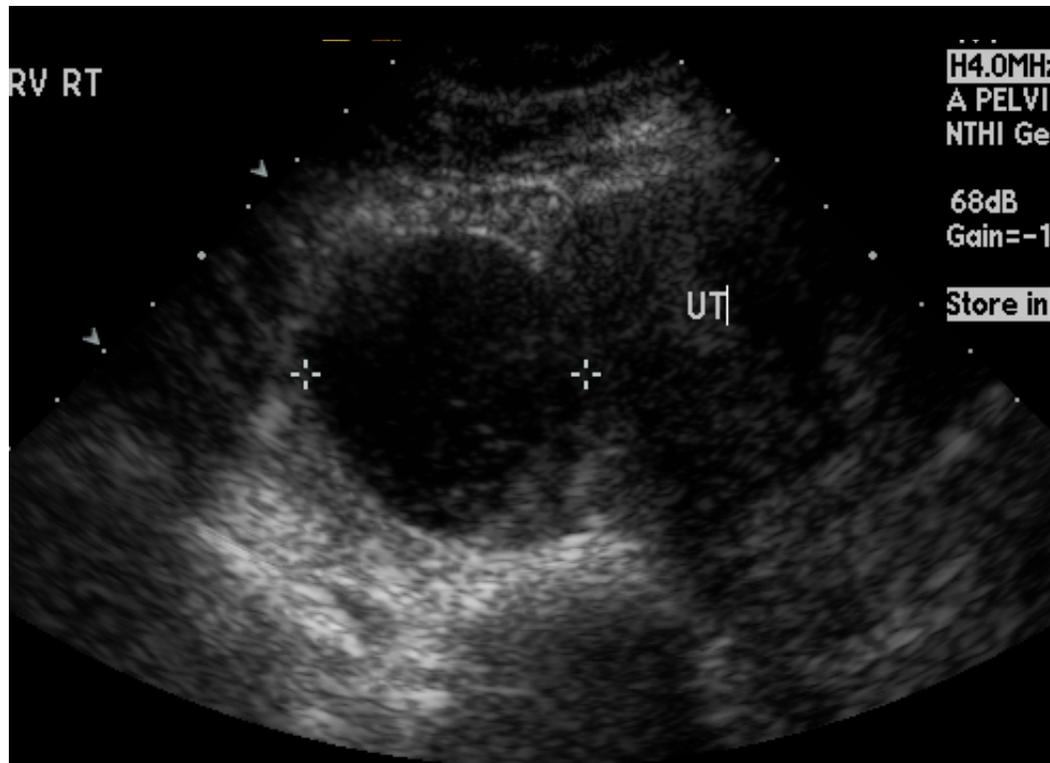


What technique is being used here?
How might it be helpful?

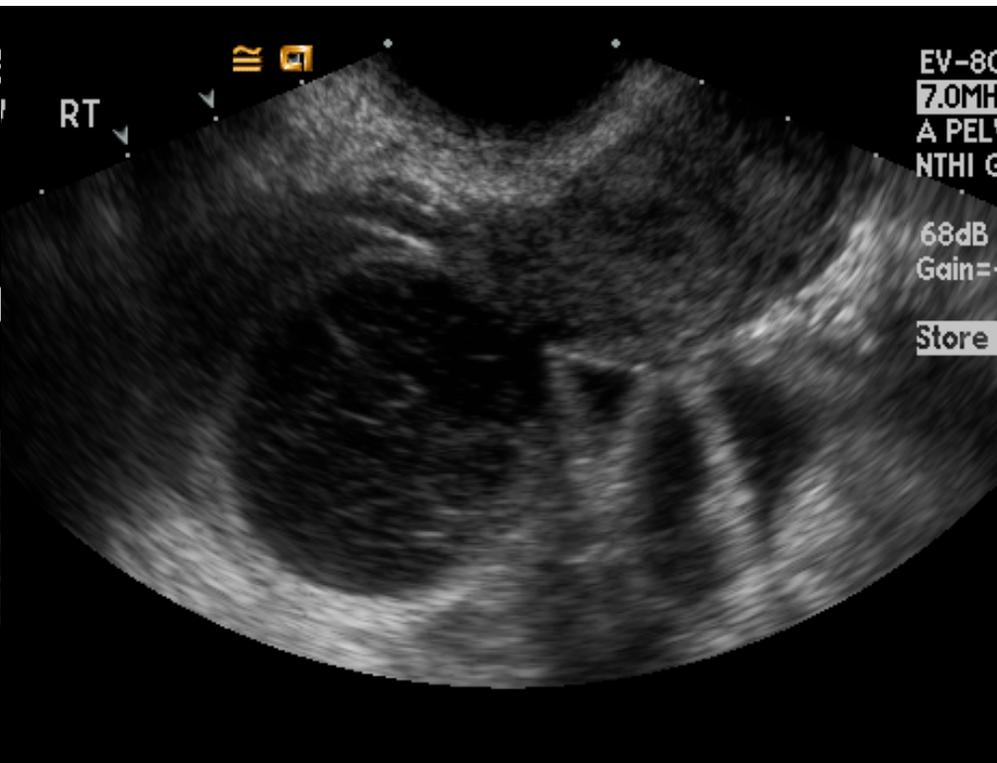
CASE 9

Case 10: 29 yr old woman with sudden pelvic pain

- What could be going on?
- What type of imaging would you order?



transabdominal



transvaginal

Both of these images show a right ovarian cyst and a part of the uterus, but with different technique
What differences in detail do you see?
How does this help make a diagnosis?