

AMSER Rad Path Case of the Month:

60 year old female with incidental renal mass finding

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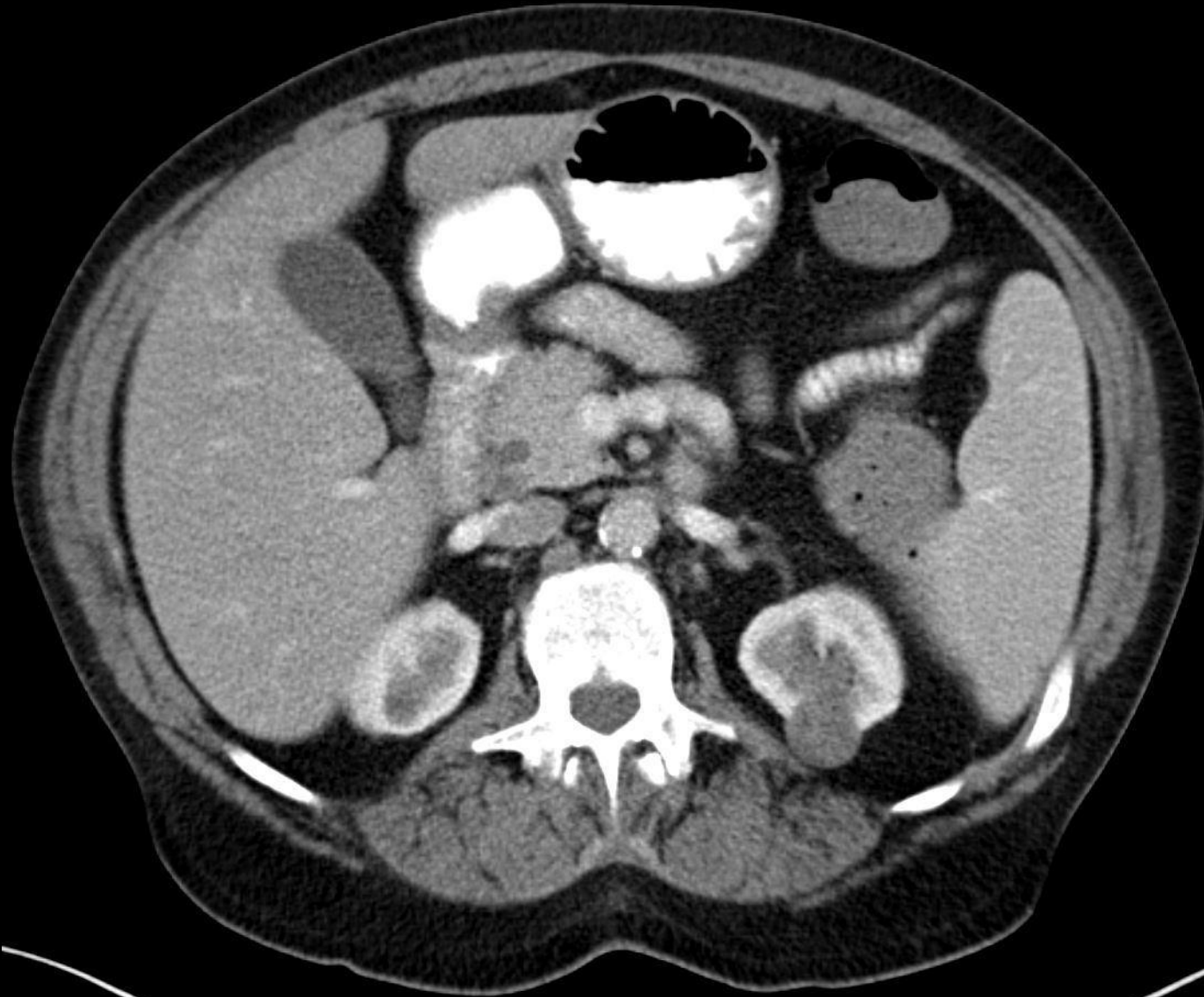
Patient Presentation

- **HPI:** Patient is a 60 y/o female who presents for evaluation of a 2.1 cm left sided renal lesion previously found on MRI during a recent hospitalization for a hepatic abscess. Further imaging revealed a mildly hyperdense cyst on CT. The patient had symptoms of chills, fatigue and unexpected weight loss. Patient denies hematuria and flank pain. She is a current smoker with a 25 pack year history.
- **PMH:** GERD, HTN, PVD, hyperlipidemia, spinal stenosis, hepatic abscess, breast abscess
- **Surgical Hx:** Angioplasty: right external iliac, right SFA, and right popliteal artery; biopsy of right breast abscess, femoral bypass graft, hysterectomy

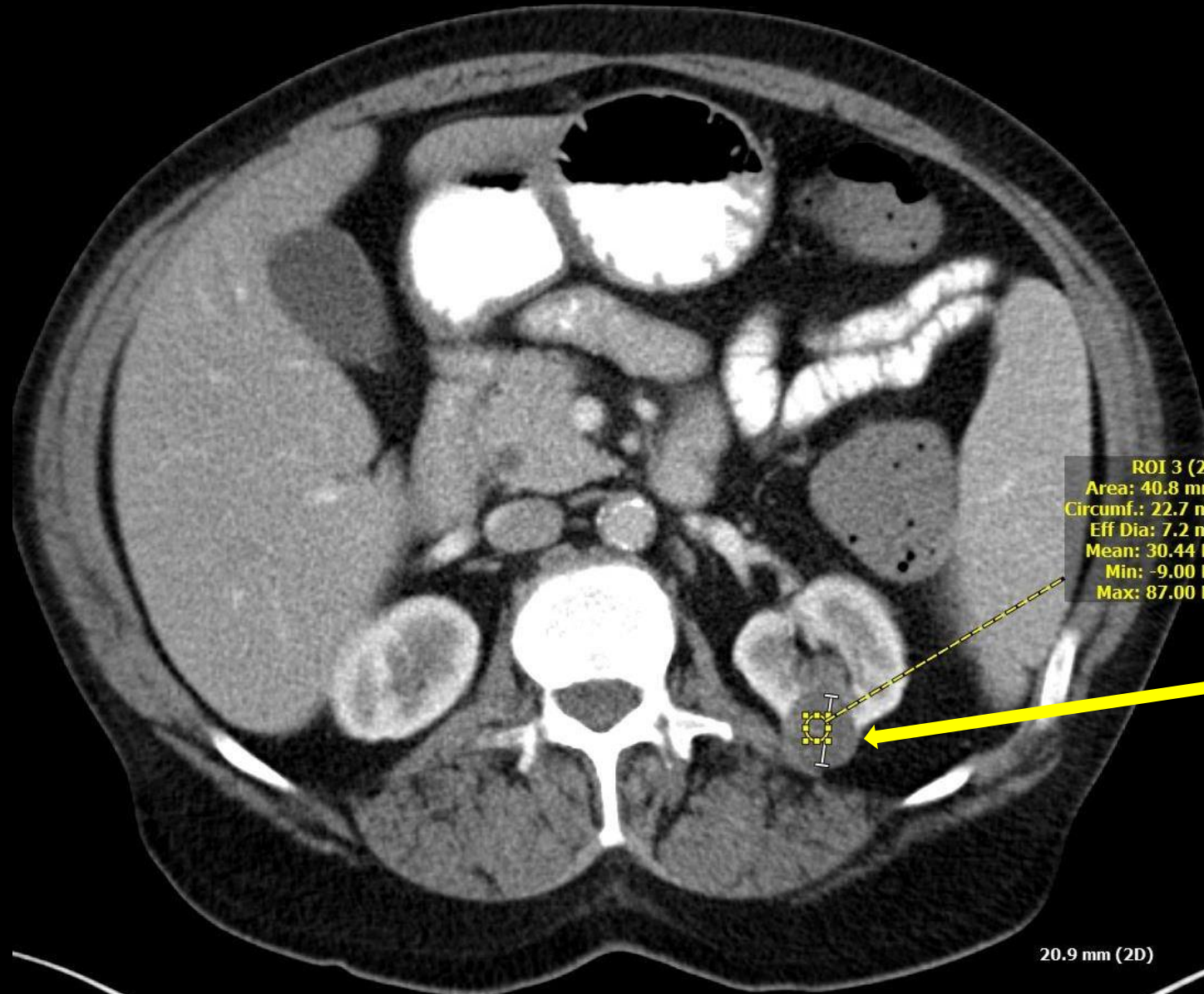
Patient Presentation

- **Social Hx:** Current cigarette smoker w/ 25 pack years hx, occasional alcohol use, smokes marijuana daily
- **Family Hx:** COPD, heart disease
- **Medications:** Albuterol inhaler, Aspirin, Atenolol, Cefdinir, Clopidogrel, HCTZ, Omeprazole, Simvastatin
- **PE:**
 - VS: BP 136/80, RR 17 Height 67" Weight 159 lbs BMI 24.90
 - General: Appears pleasant and well
 - Heart: RRR, no M/R/G
 - Lungs: CTABL, no wheezing or rales
 - Abdomen: Soft, non-tender, normoactive bowel sounds
 - GU: Bladder non-tender, no CVAT
- **Labs:** UA was yellow, clear and negative for all components.

CT Abdomen with Contrast



CT Abdomen with Contrast

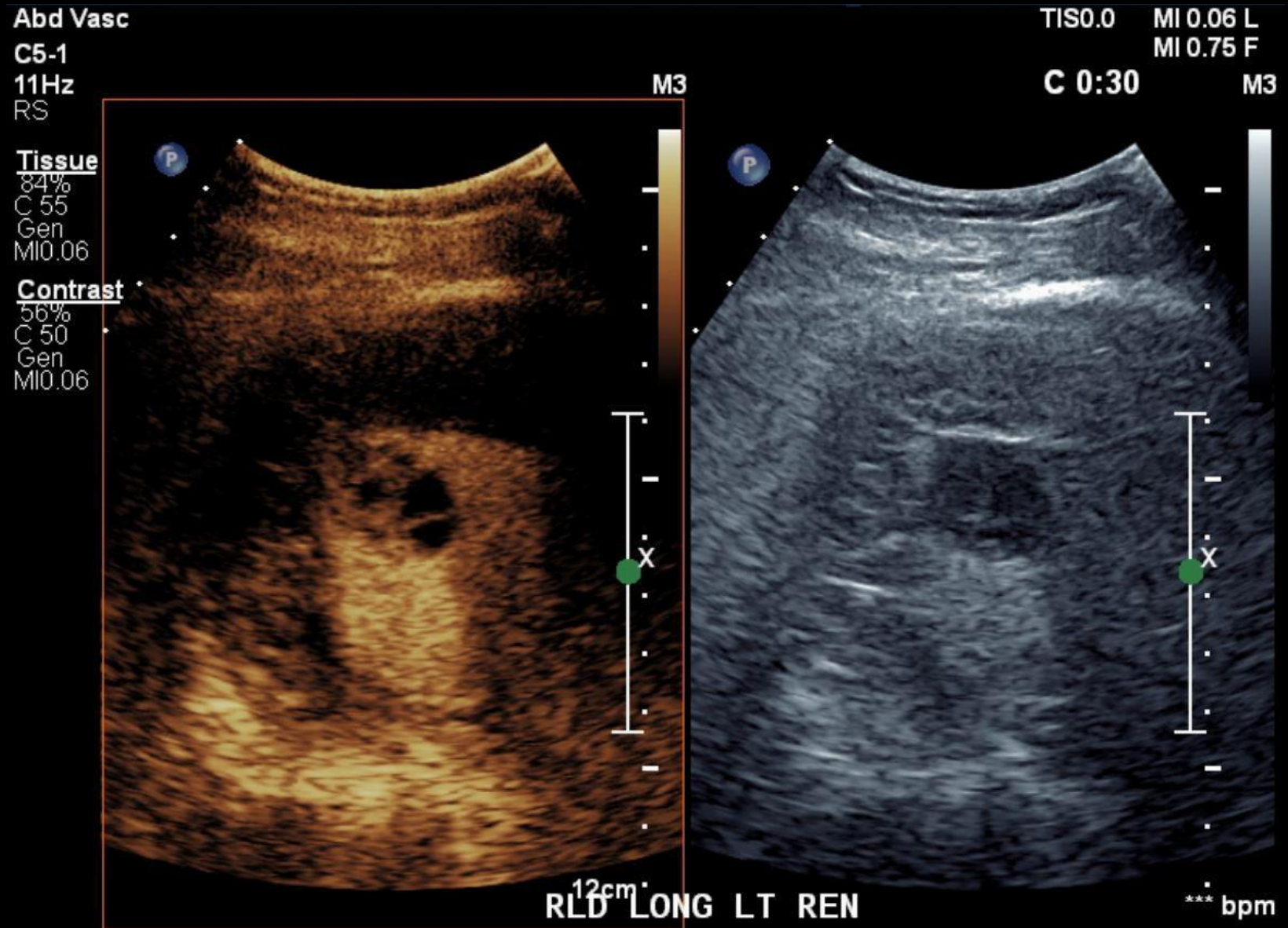


There was no unenhanced imaging to determine if this was an enhancing lesion.

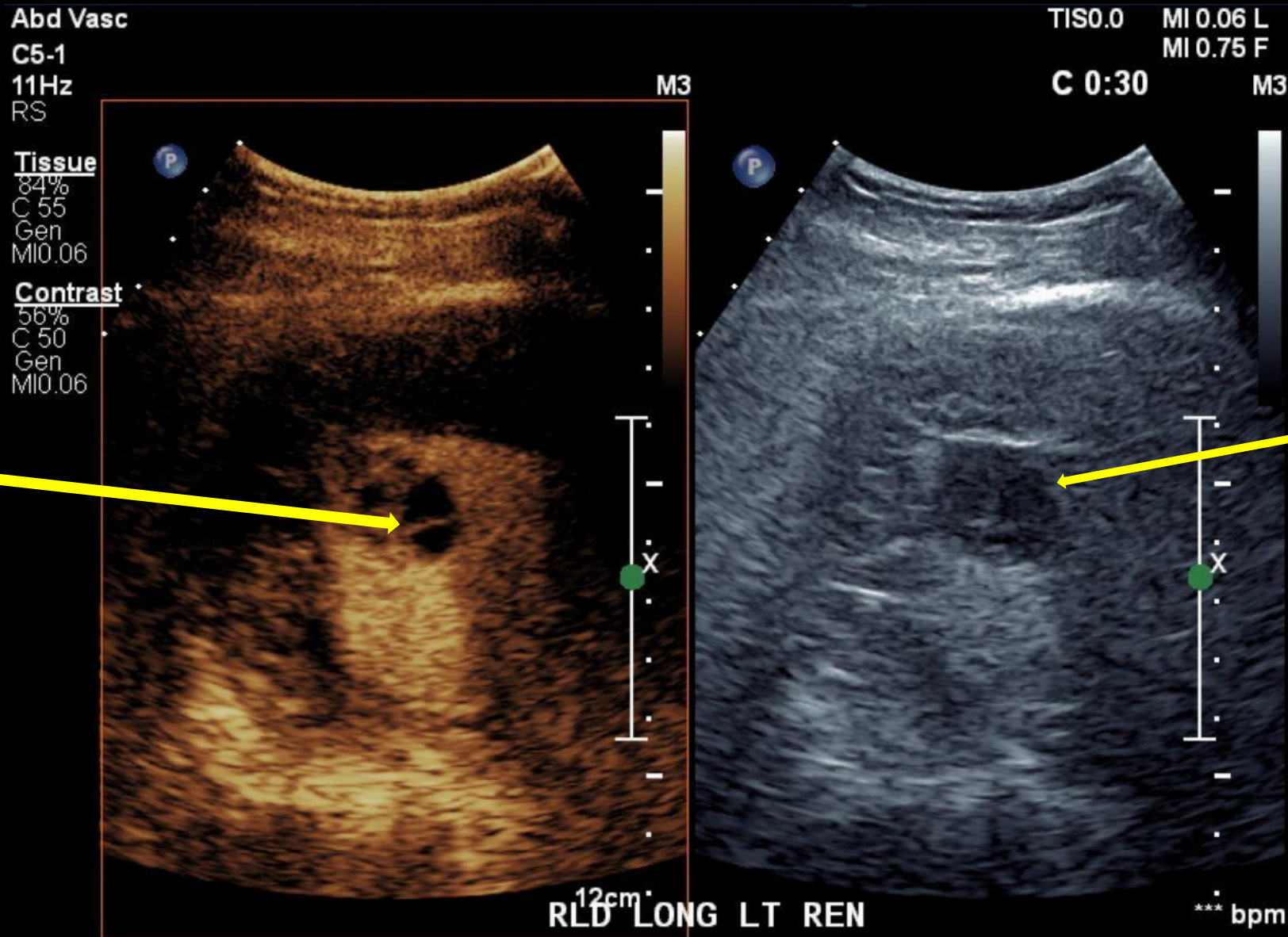
Contrast enhanced CT demonstrates a 2.1 cm exophytic, mildly hyperdense cystic lesion in the upper pole of the left kidney.

20.9 mm (2D)

Contrast-enhanced Ultrasound of Kidney



Contrast-enhanced Ultrasound of Kidney



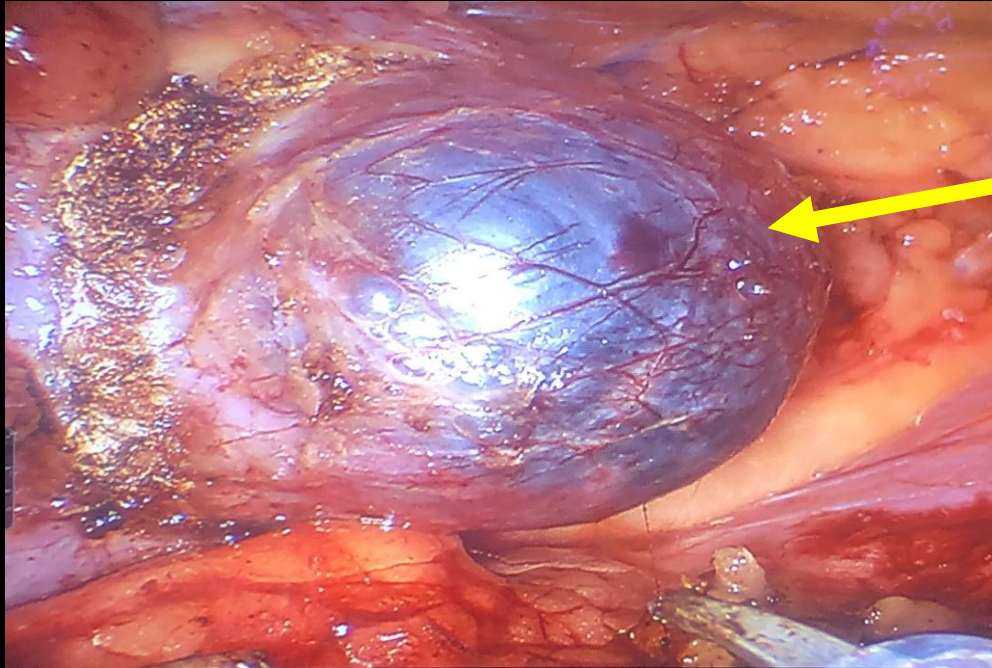
Contrast enhanced ultrasound better demonstrates enhancing septations within the lesion worrisome for neoplastic process

Septated cystic lesion in upper pole of left kidney measuring 2.5 cm in greatest dimension

Differential Diagnosis

- Renal cell carcinoma
- Complex renal cyst
- Infection/abscess
- Oncocytoma
- Lymphoma
- Metastasis

Gross Path

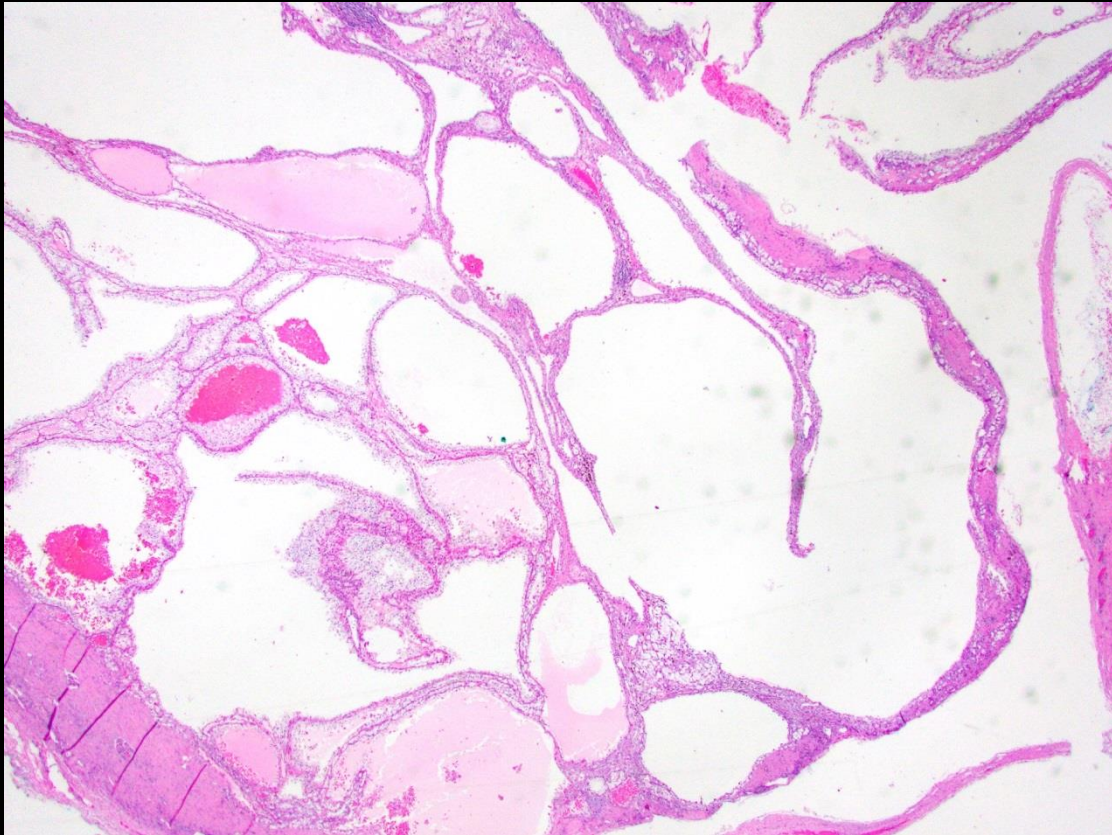


Intraoperative photo of renal cell carcinoma lesion

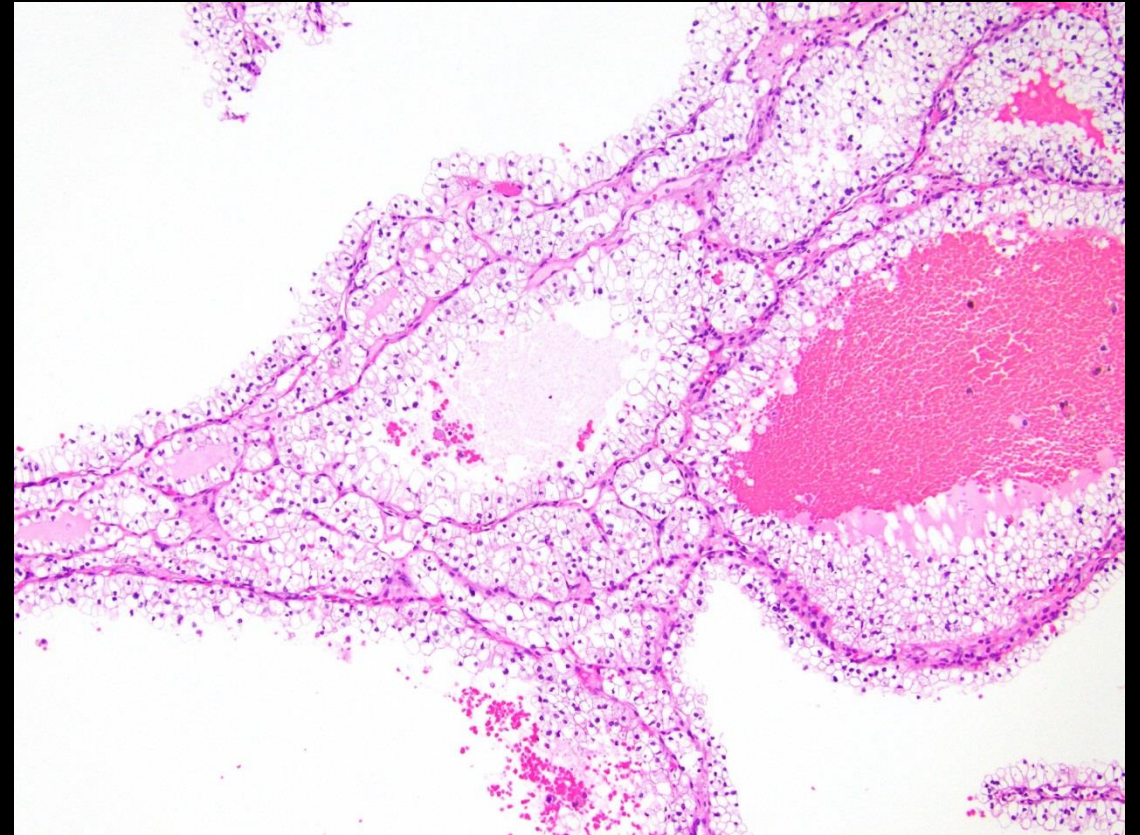
2.5 x 1.2 x 0.7 cm multiloculated lesion



Histology H&E

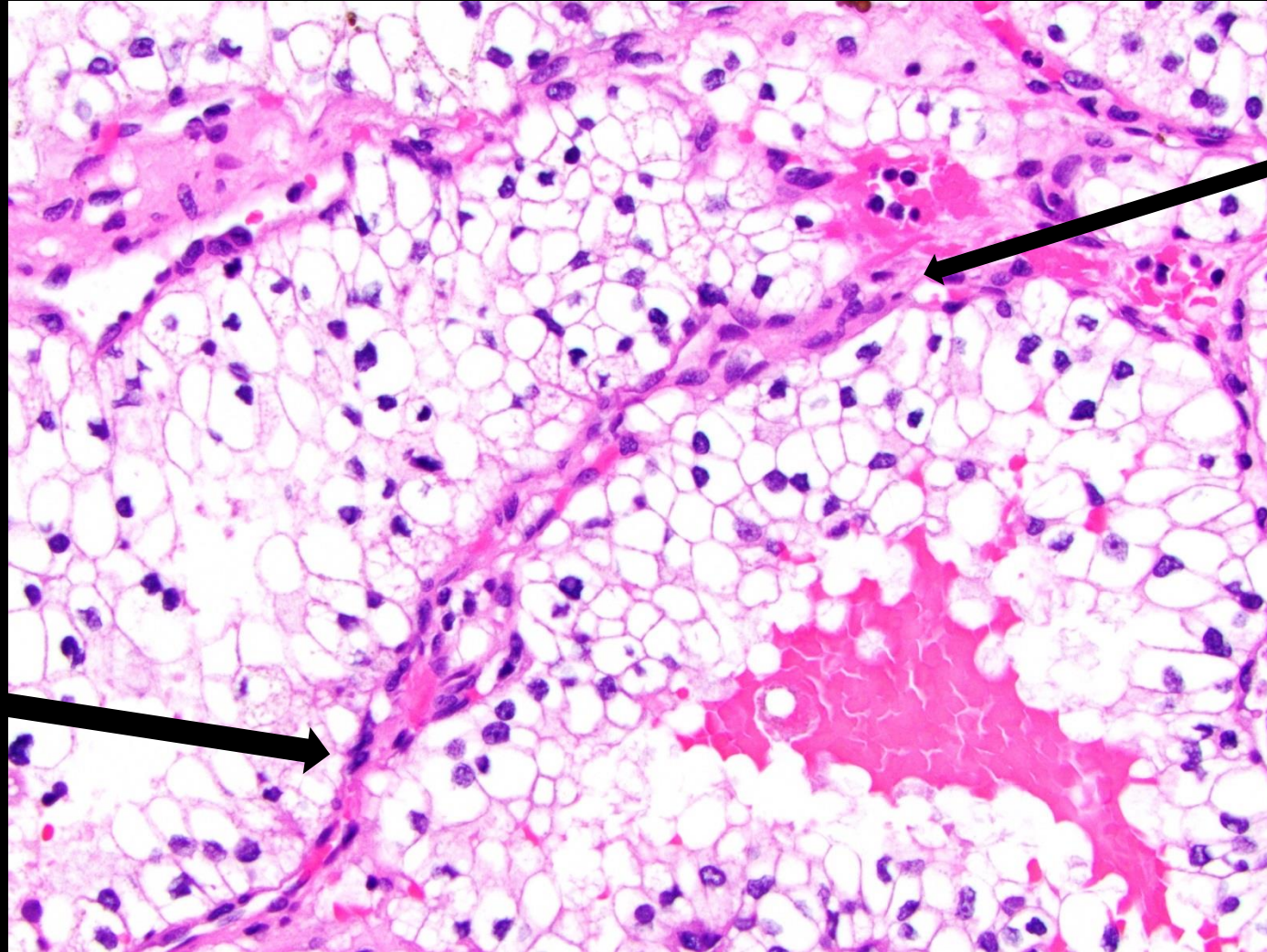


H&E stain of left multicystic kidney lesion. x20.



H&E stain. Tumor cells with round, centrally placed nuclei surrounded by clear cytoplasm. x100.

Histology H&E



H&E stain. Tumor cells arranged in small groups with delicate vasculature (arrows). x400.

Final Diagnosis:

Clear Cell Renal Cell Carcinoma

Discussion

- Clear cell renal cell carcinoma often arise from the renal cortex and account for 80-85% of all RCCs, making it the most common subtype.
- 15% of RCCs have a cystic component
- These tumors are typically hypervascular lesions that are sometimes heterogeneous due to necrosis, hemorrhage, cystic components and calcifications.
- 95% of cases of clear cell RCC are sporadic
- Risk factors include smoking, obesity, HTN, acquired cystic disease of kidney and occupational exposure.
- Prognosis depends on staging
- Patients (such as this) with stage I-III disease, radical or partial nephrectomy is the best treatment option and usually curative.
- Advanced stage IV disease requires treatment with molecularly-targeted therapy.

Radiology Diagnosis

- Contrast-enhanced ultrasound (CEUS) uses IV contrast agent consisting of microbubbles. After these bubbles burst, they are expired through the lungs. This allows safe use in pts with renal failure or iodine contrast allergy.
- CEUS improves the diagnostic efficacy of conventional US and decreases the need for additional diagnostic studies/biopsies warranted for management in small renal masses.
- CEUS helps confirm solid component of a renal mass if CT or MRI findings are indeterminate/equivocal.

References

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