

# AMSER Rad Path Case of the Month:

58-year-old female with a renal incidentaloma

Hamid Syed, MS4

Lake Erie College of Osteopathic Medicine

Cody Marshall, DO PGY-4

Goutham Vemana, MD

Edward Lynch, MD

Matthew Hartman, MD

Allegheny Health Network



# Patient Presentation

- **HPI:** 58-year-old female with intermittent episodes of severe non-localizing abdominal pain, cramping, nausea, vomiting, diarrhea; diagnosed as terminal ileitis
- **PMHx:** HTN, DM
- **Surg Hx:** cholecystectomy, colon polyp removal

# Patient Presentation

- **Vitals:** BP 138/83, HR 71, Temp 97.1°F, RR 20, SpO2 98%
- **PE:** unremarkable
- **Labs**
  - WBC - 17.9K (H)
  - Hgb - 15.9 (H)
  - Lactic acid - 2.7 (H)

What Imaging Should We Order?

# Select the Applicable ACR Appropriateness Criteria

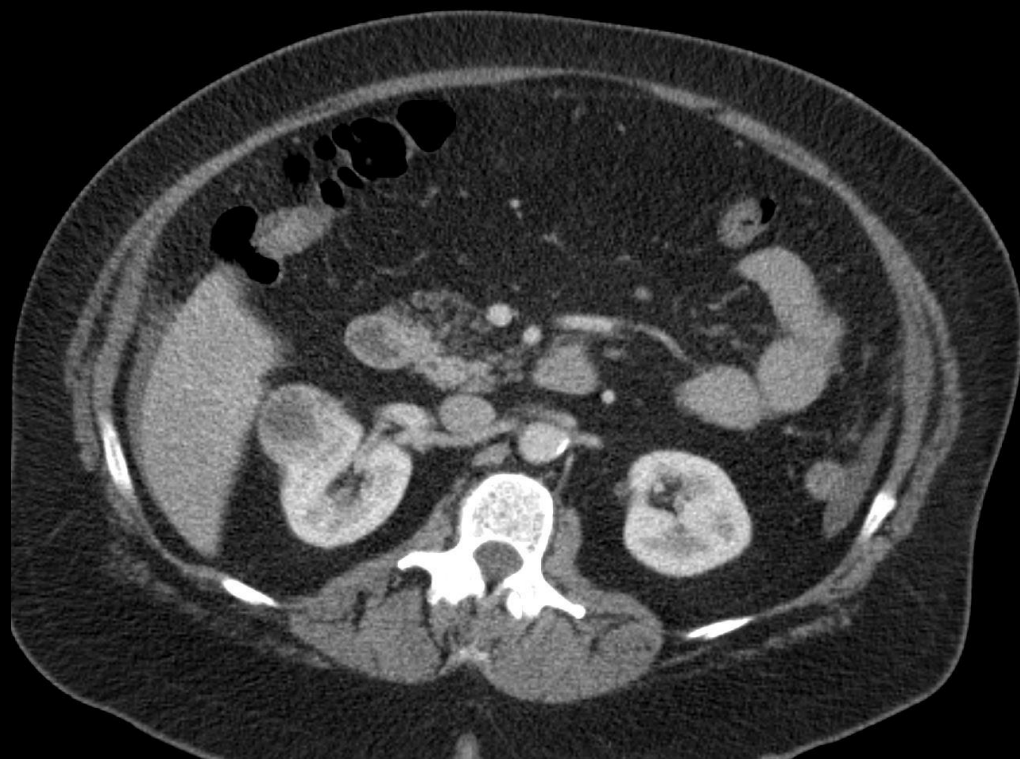
**Variant 4:** Acute nonlocalized abdominal pain. Not otherwise specified. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
CT abdomen and pelvis with IV contrast	Usually Appropriate	☼☼☼☼
CT abdomen and pelvis without IV contrast	Usually Appropriate	☼☼☼☼
MRI abdomen and pelvis without and with IV contrast	Usually Appropriate	○
US abdomen	May Be Appropriate	○
MRI abdomen and pelvis without IV contrast	May Be Appropriate	○
CT abdomen and pelvis without and with IV contrast	May Be Appropriate	☼☼☼☼☼
Radiography abdomen	May Be Appropriate	☼☼
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	☼☼☼☼☼
WBC scan abdomen and pelvis	Usually Not Appropriate	☼☼☼☼☼
Nuclear medicine scan gallbladder	Usually Not Appropriate	☼☼
Fluoroscopy upper GI series with small bowel follow-through	Usually Not Appropriate	☼☼☼☼
Fluoroscopy contrast enema	Usually Not Appropriate	☼☼☼☼



This imaging modality was ordered

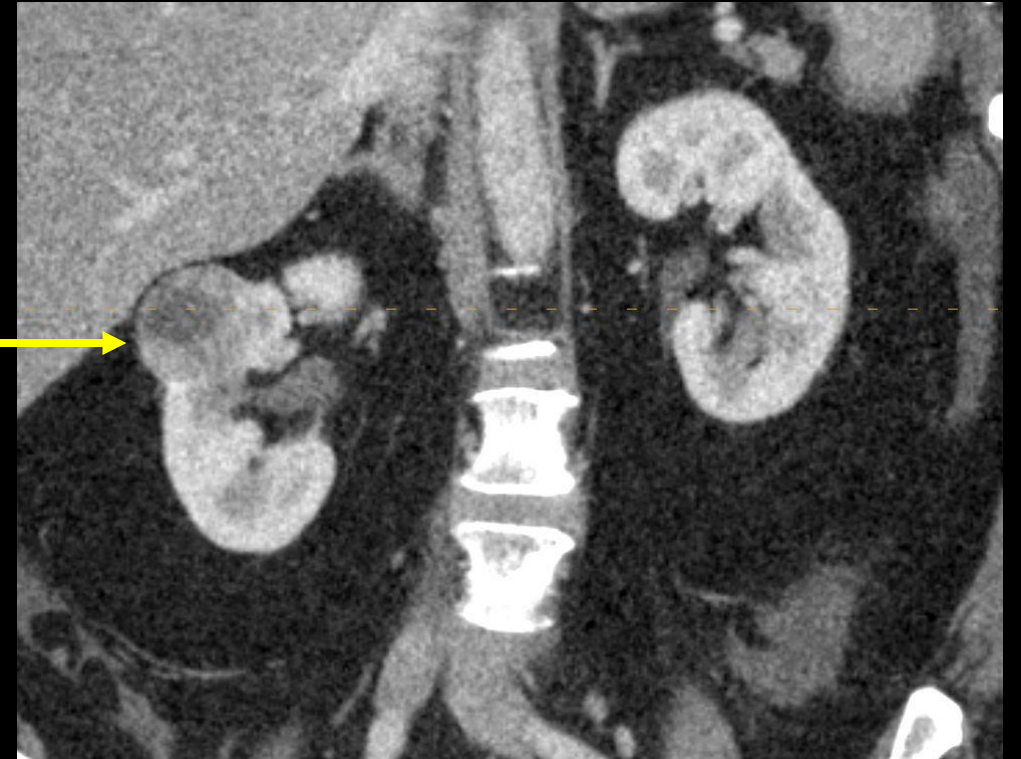
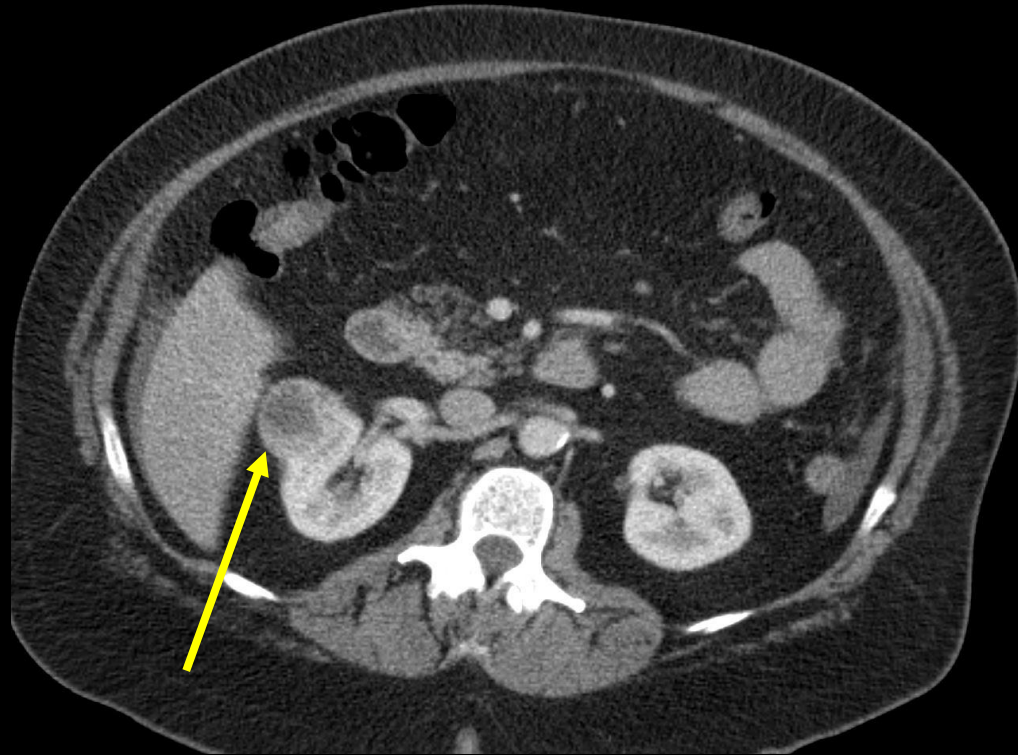
# CT abdomen and pelvis with contrast



# CT abdomen and pelvis with contrast

Axial CT

Coronal CT



Enhancing complex renal mass arising from the right upper pole of the right kidney

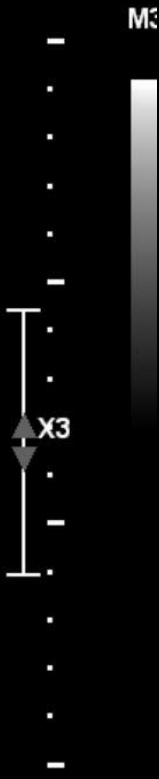
# RUQ ultrasound

Abd Renal  
C5-1  
19Hz  
RS

2D  
66%  
Dyn R 55  
P Low  
HGen

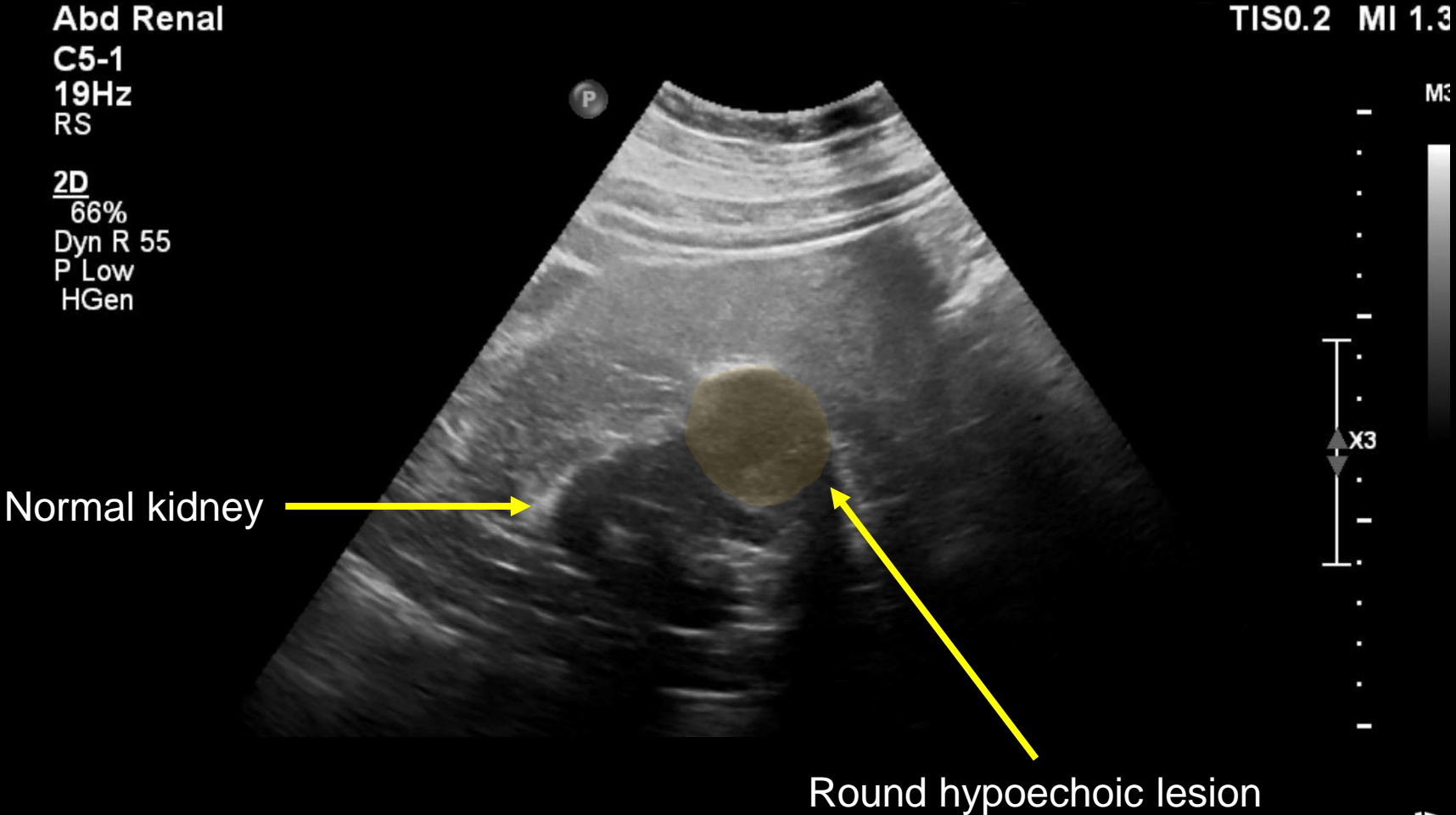


TIS0.2 MI 1.3

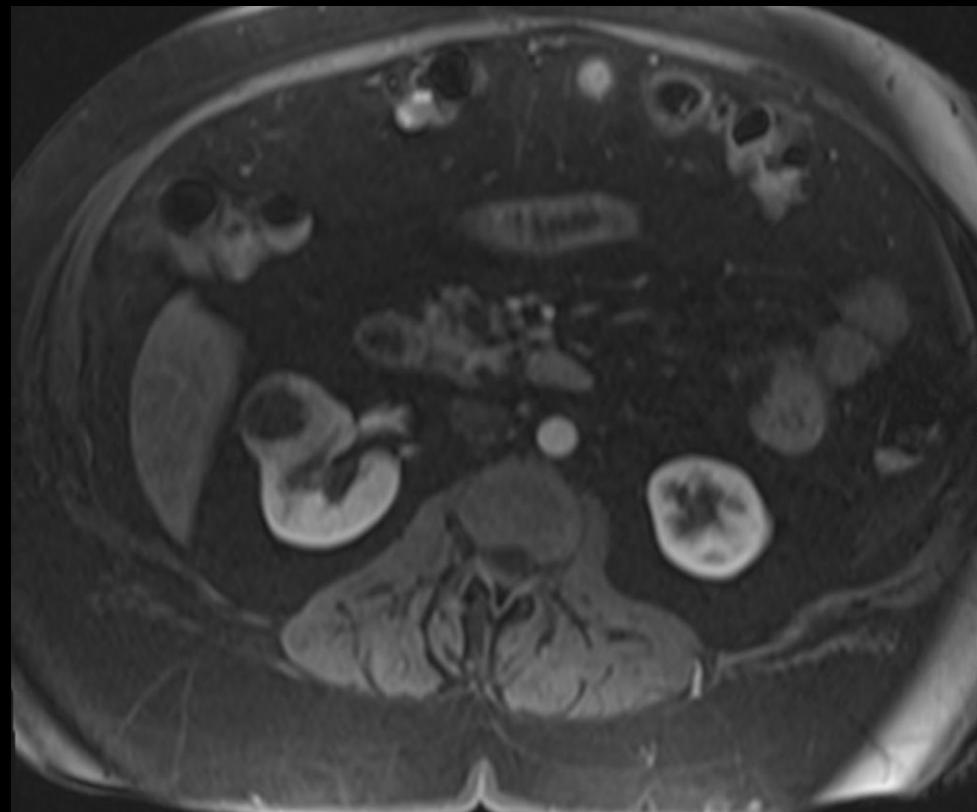
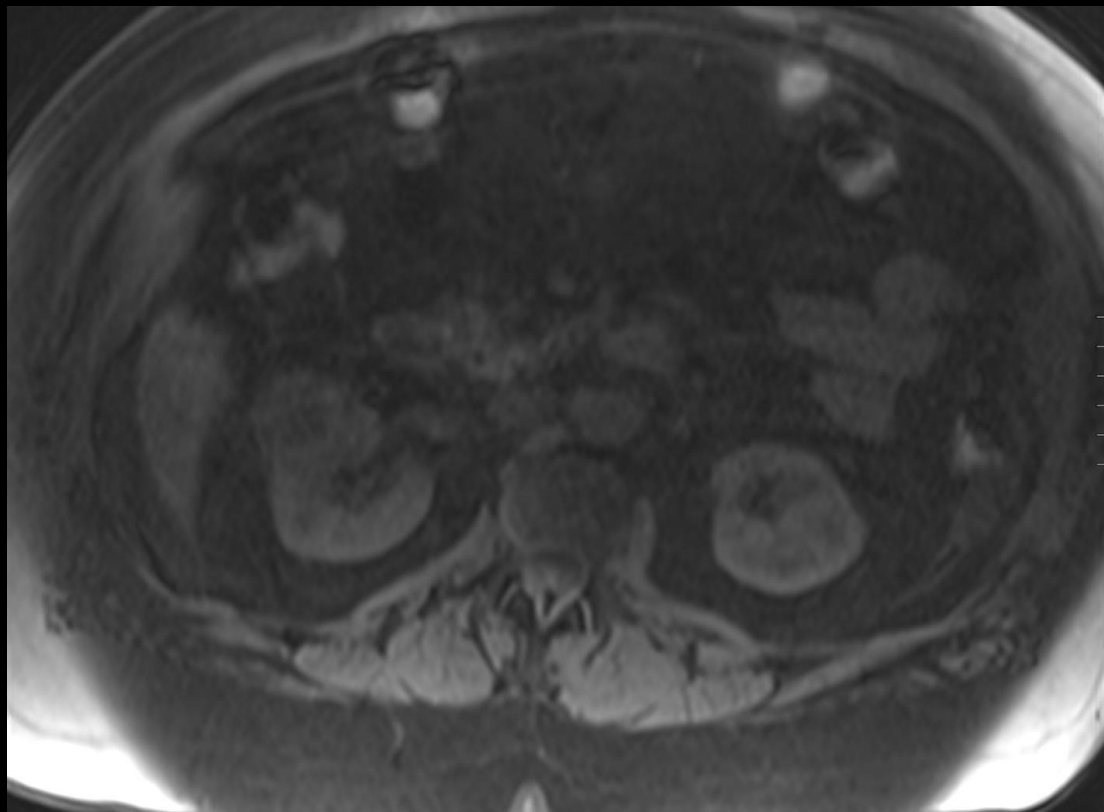




# RUQ ultrasound

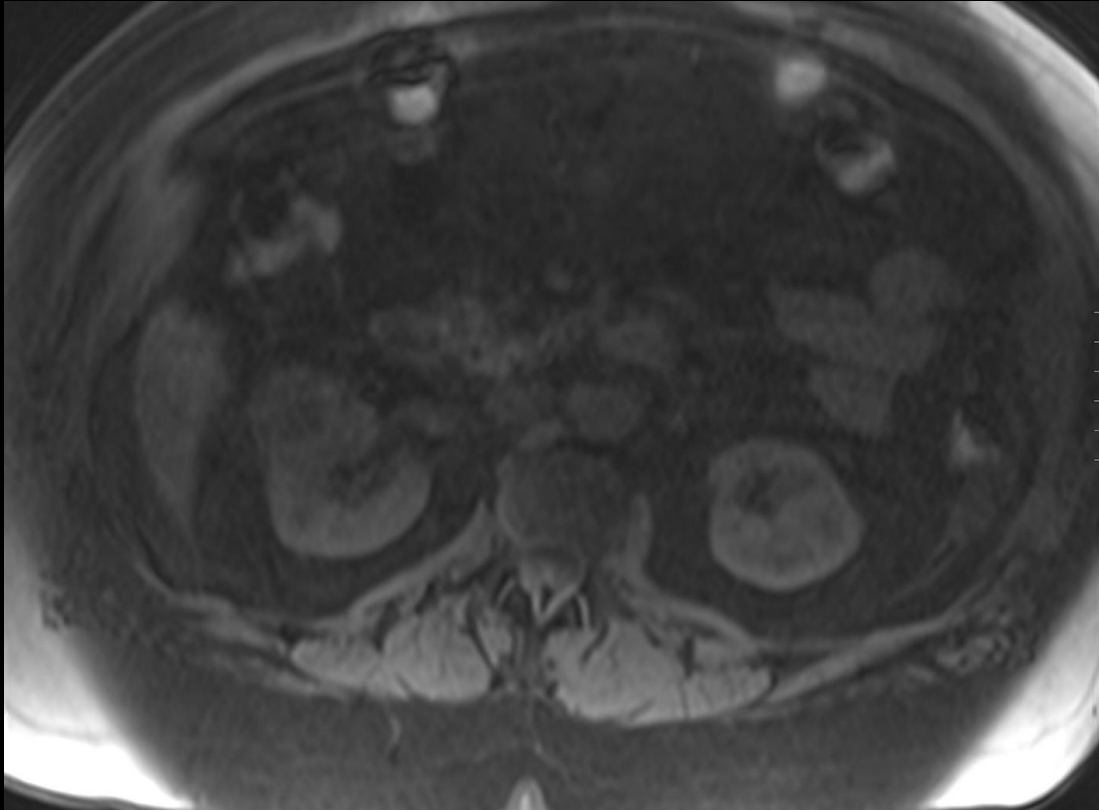


# MRI abdomen with and without contrast

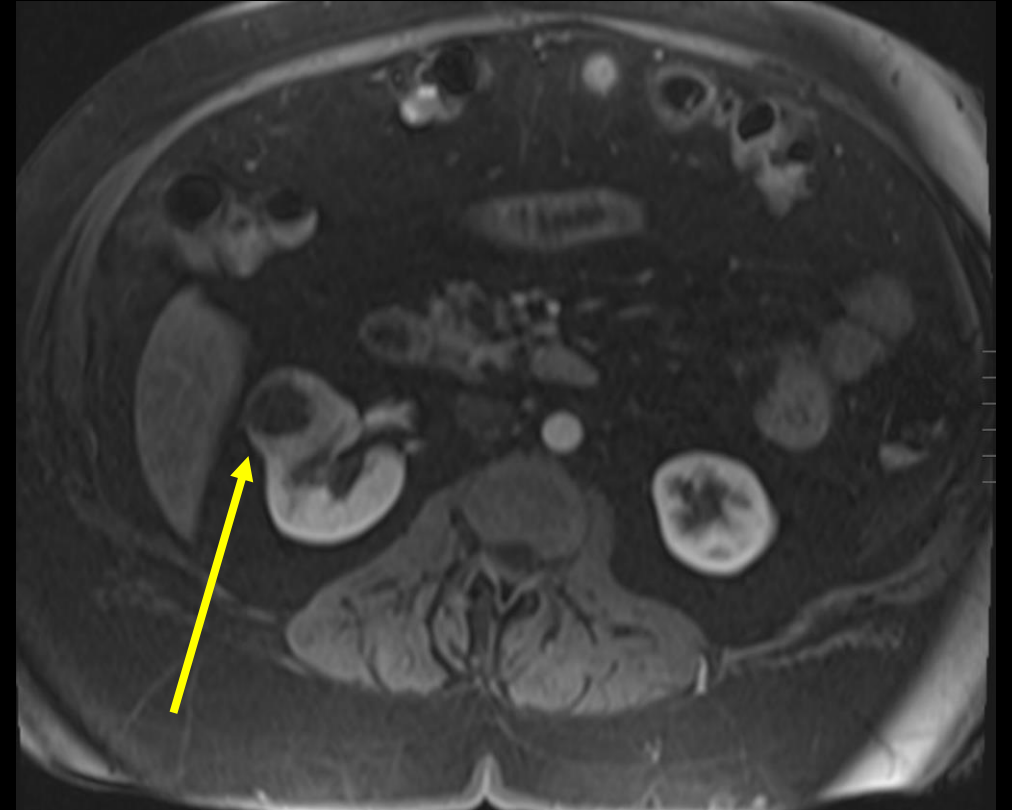


# MRI abdomen with and without contrast

T1 without contrast



T1 with contrast



Enhancing lesion in the right upper pole with central non-enhancement which could indicate necrosis

# Differential Diagnosis

- Renal cell carcinoma
- Angiomyolipoma
- Oncocytoma
- Complex renal cyst
- Lymphoma
- Metastasis

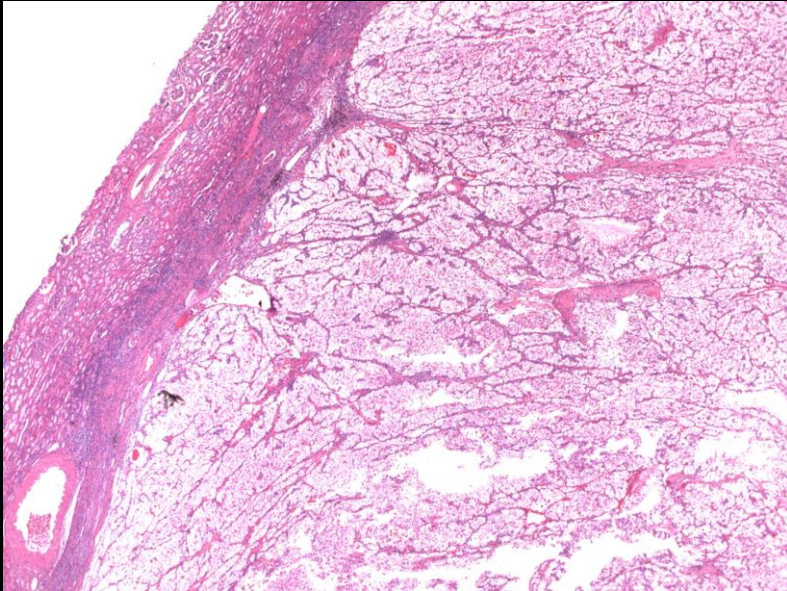
# Gross Pathology



3.3 x 3.0 x 2.7 cm glistening yellow-tan lesion with areas of hemorrhage and necrosis;  
specimen removed via laparoscopic partial nephrectomy

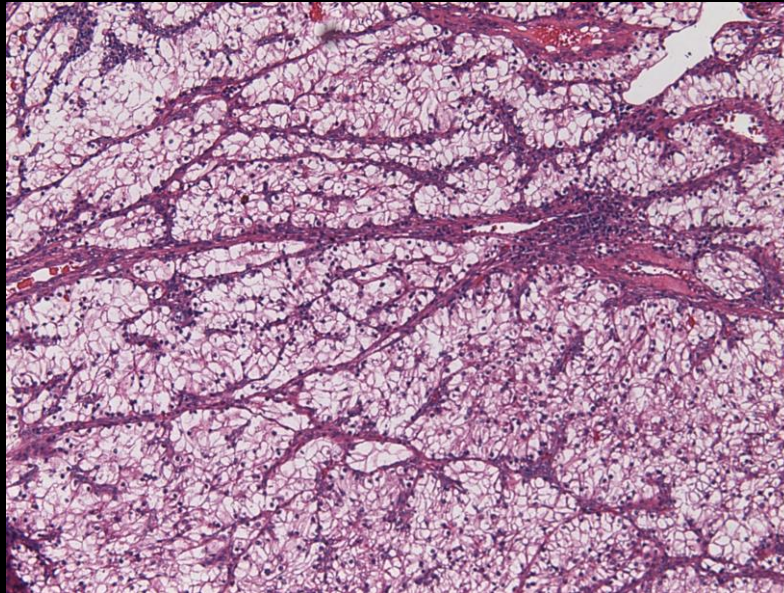
# Micro Pathology

20x



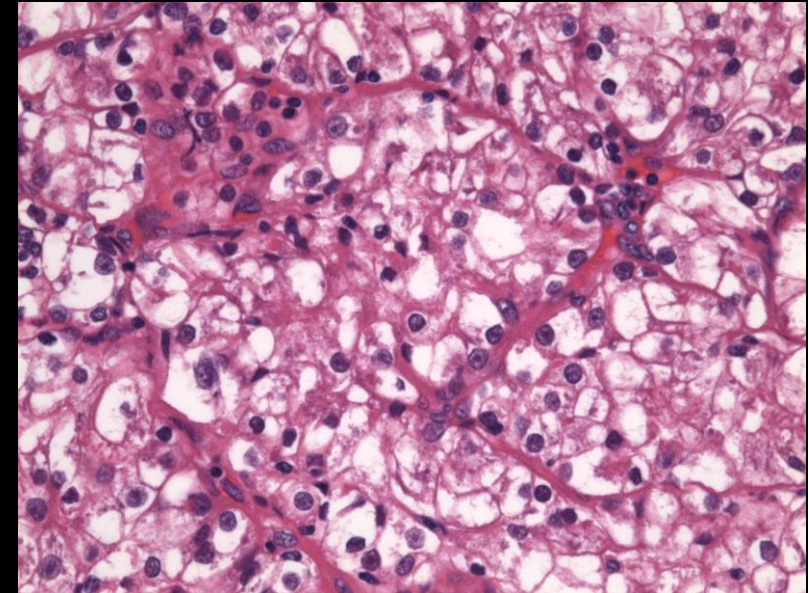
H&E staining of tumor cells compressing normal renal parenchyma

100x



Nests of tumor cells separated by prominent network of thin-walled vessels

400x



Cells with conspicuous nucleoli and ample clear cytoplasm containing lipid and glycogen

Final Diagnosis:

Clear Cell Renal Cell Carcinoma

# Case Discussion

- **Epidemiology**

- RCC is the most common primary malignancy of the renal parenchyma (~80%)
- Clear cell RCC arises from the proximal convoluted tubule and is the most common subtype (~70%)

- **Etiology**

- 95% are sporadic, others are hereditary (Von Hippel Lindau, Tuberous Sclerosis)
- Risk factors – smoking, obesity, hypertension, acquired cystic kidney disease

- **Clinical features**

- Classic triad of palpable mass, flank pain, hematuria present in < 10%
- Asymptomatic, constitutional symptoms, paraneoplastic syndrom



# Case Discussion

- **Diagnosis**
  - Majority are incidental findings on imaging
  - Definitive diagnosis via nephrectomy
- **Staging** – based on size, regional spread (lymph nodes, renal vein, IVC), distant metastases
- **Treatment**
  - Radical or partial nephrectomy
  - Targeted therapy and/or immunotherapy for metastatic disease
- **5-year survival** – 50-70% after nephrectomy, 10% if metastatic

# References

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