AMSER Case of the Month August 2023

HPI: 60 y/o M with generalized weakness, nausea, loss of appetite

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SCHOOL OF MEDICINE
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Patient Presentation

- Patient presented with generalized weakness, nausea, loss of appetite for past 24 hours
- PMH: NASH cirrhosis
- PSH: status post liver/kidney transplant 12 months ago
- Patient has not been taking anti-rejection medication for past 6 days
- Fam Hx: Two siblings with kidney disease
- Soc Hx: Does not drink or smoke
- Physical Exam: LUQ and LLQ abdominal tenderness present with distention

Pertinent Labs

- Creatinine is 2.18 which is slightly elevated compared to baseline
- Alkaline phosphatase is 571 which is slightly elevated to baseline
- AST and ALT are normal
- VBG shows a pH of 7.369, PCO2 of 28.2, PO2 of 30.3, lactate of 4.2. Initial troponin is 125, N-terminal proBNP is 1516, lipase is normal. Patient has no leukocytosis, hemoglobin 9.3, platelets 142,000

What Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

Variant 3: **Abnormal liver function tests. Cholestatic predominance. Elevated alkaline phosphatase with or without elevated gamma-glutamyl transpeptidase. Initial imaging.**

Procedure	Appropriateness Category	Relative Radiation Level
US abdomen	Usually Appropriate	O
MRI abdomen without and with IV contrast with MRCP	Usually Appropriate	O
CT abdomen and pelvis with IV contrast	Usually Appropriate	☢☢☢
US duplex Doppler abdomen	Usually Appropriate	O
MRI abdomen without IV contrast with MRCP	May Be Appropriate	O
CT abdomen and pelvis without IV contrast	May Be Appropriate	☢☢☢
US abdomen with IV contrast	Usually Not Appropriate	O
US shear wave elastography abdomen	Usually Not Appropriate	O
MR elastography abdomen	Usually Not Appropriate	O
CT abdomen and pelvis without and with IV contrast	Usually Not Appropriate	☢☢☢☢

This follow-up imaging modality was ordered by the ER physician at the recommendation of the radiologist.

This imaging modality was initially ordered by the ER physician.

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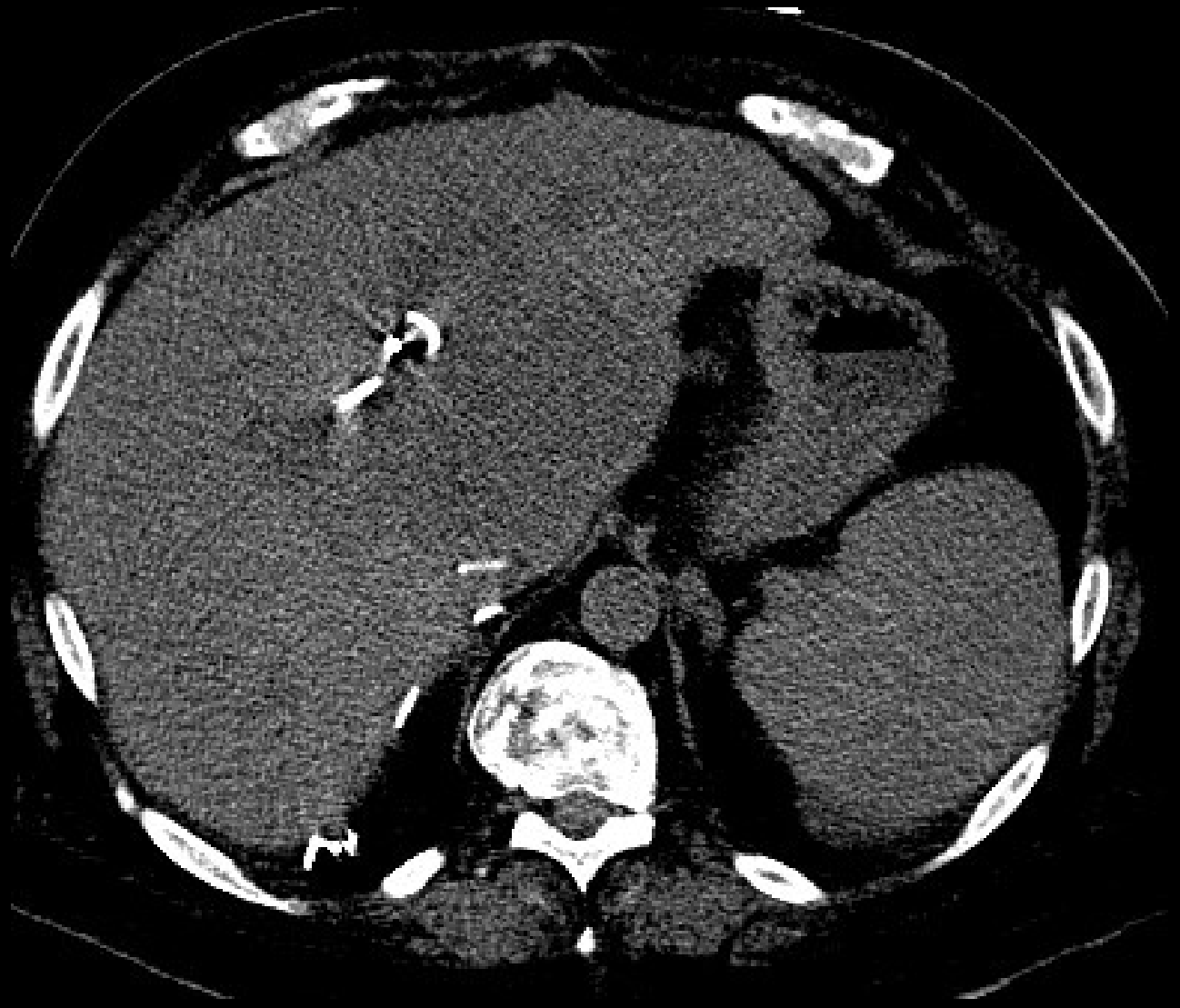
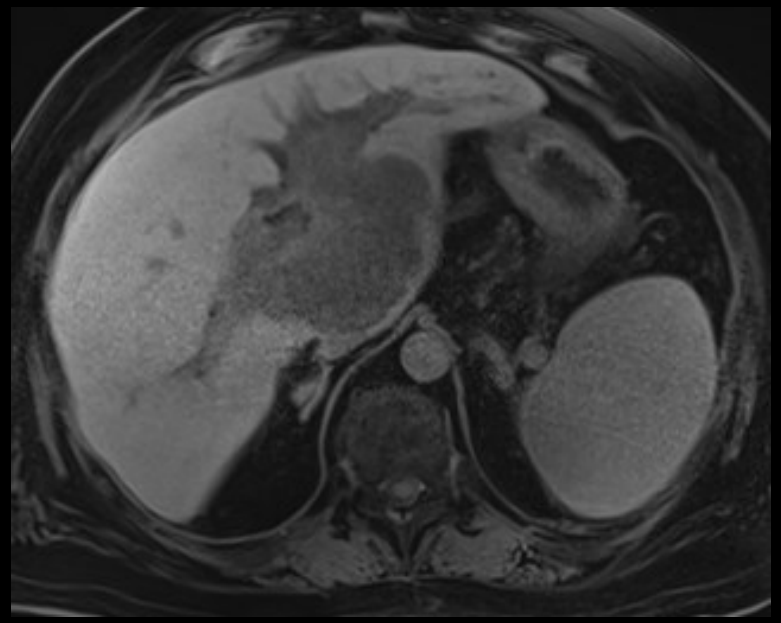
CT Findings (unlabeled)

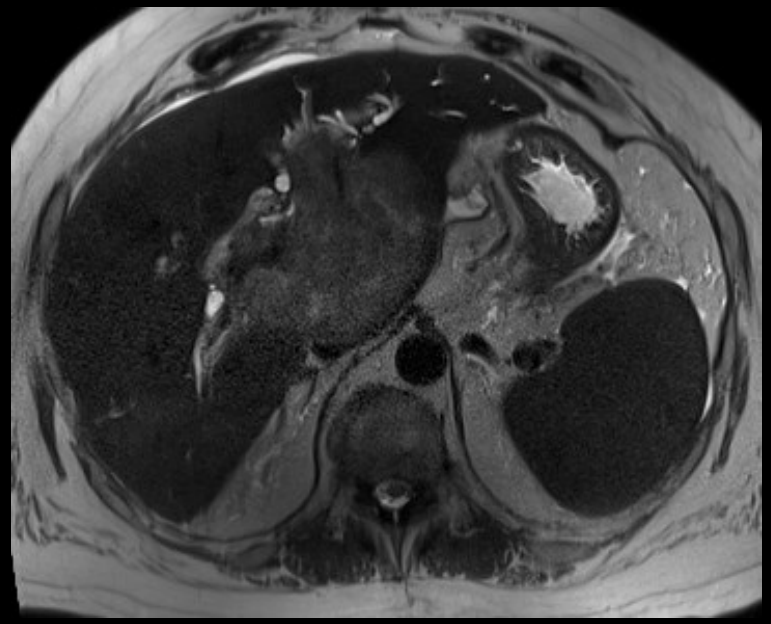


MRI Findings (unlabeled)

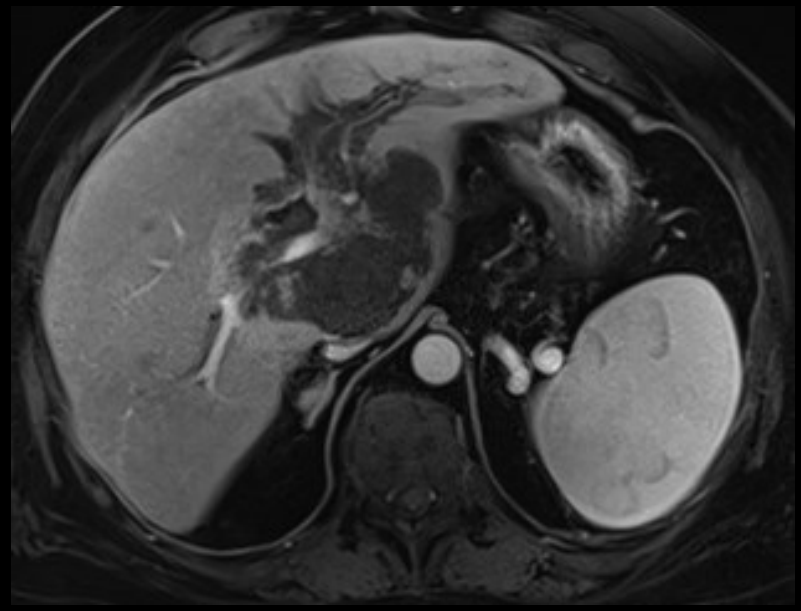
T1



T2



T1 post contrast



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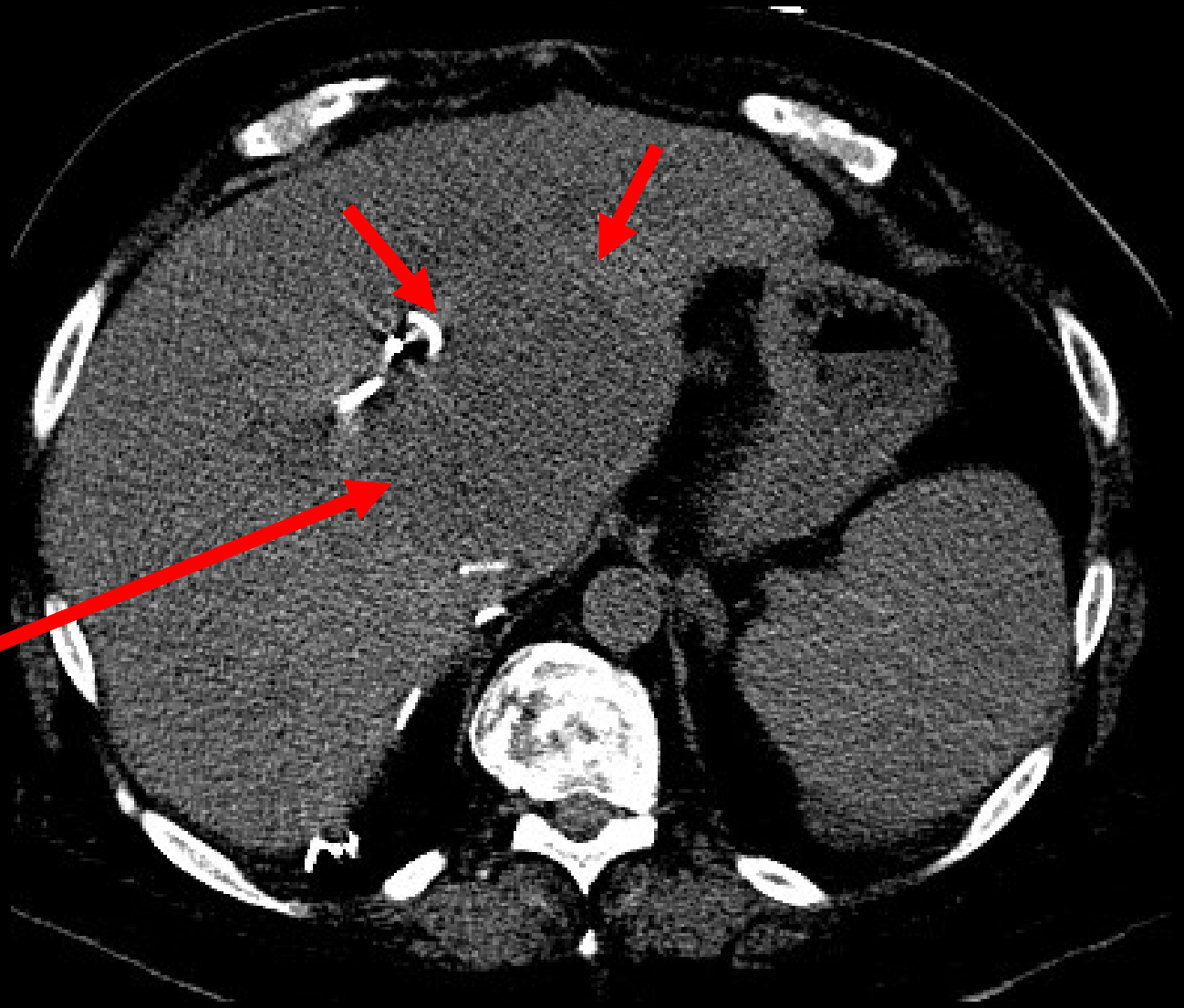
CT Findings (labeled)



8 cm region of hypodensity within the hepatic hilum on CT Abdomen w/o cont

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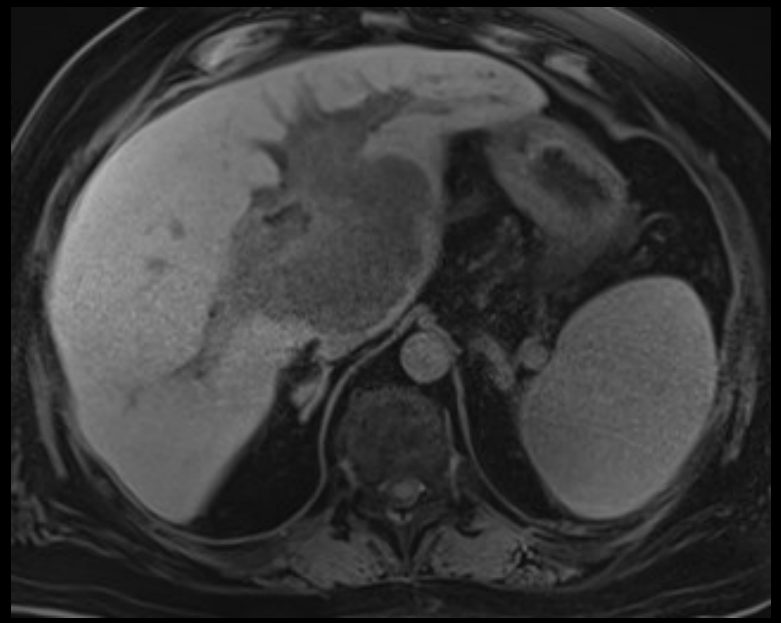
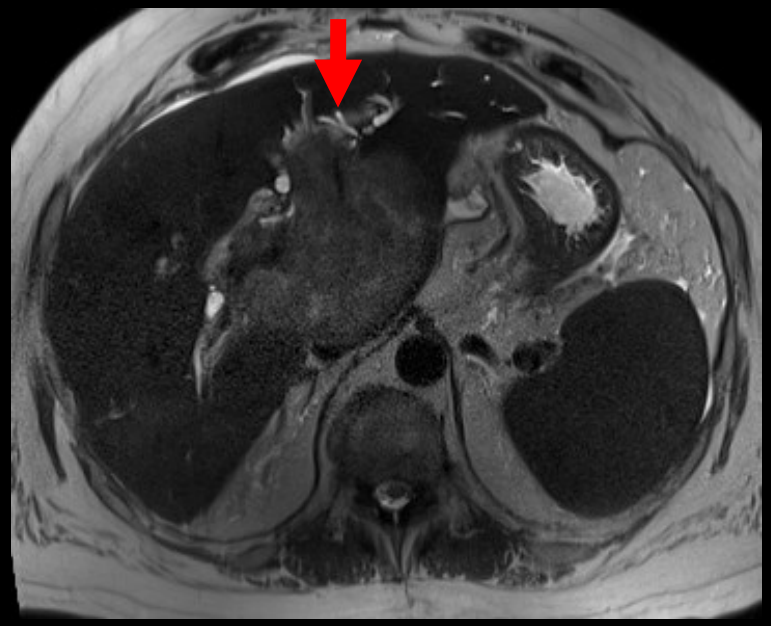
MRI Findings (labeled)

T1



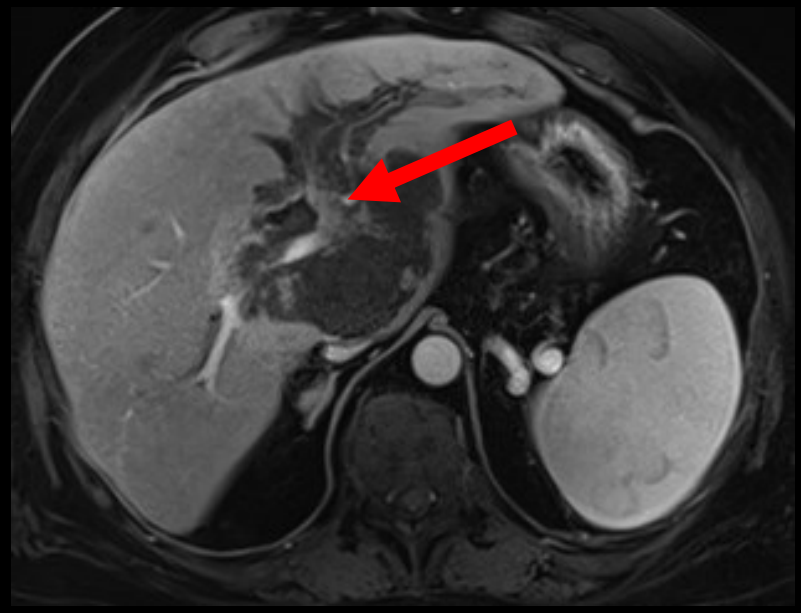
9.9cm T1 hypointense mass centered at the liver hilum, extending into caudate, left hepatic lobe, along left portal vein and bile duct branches

T2



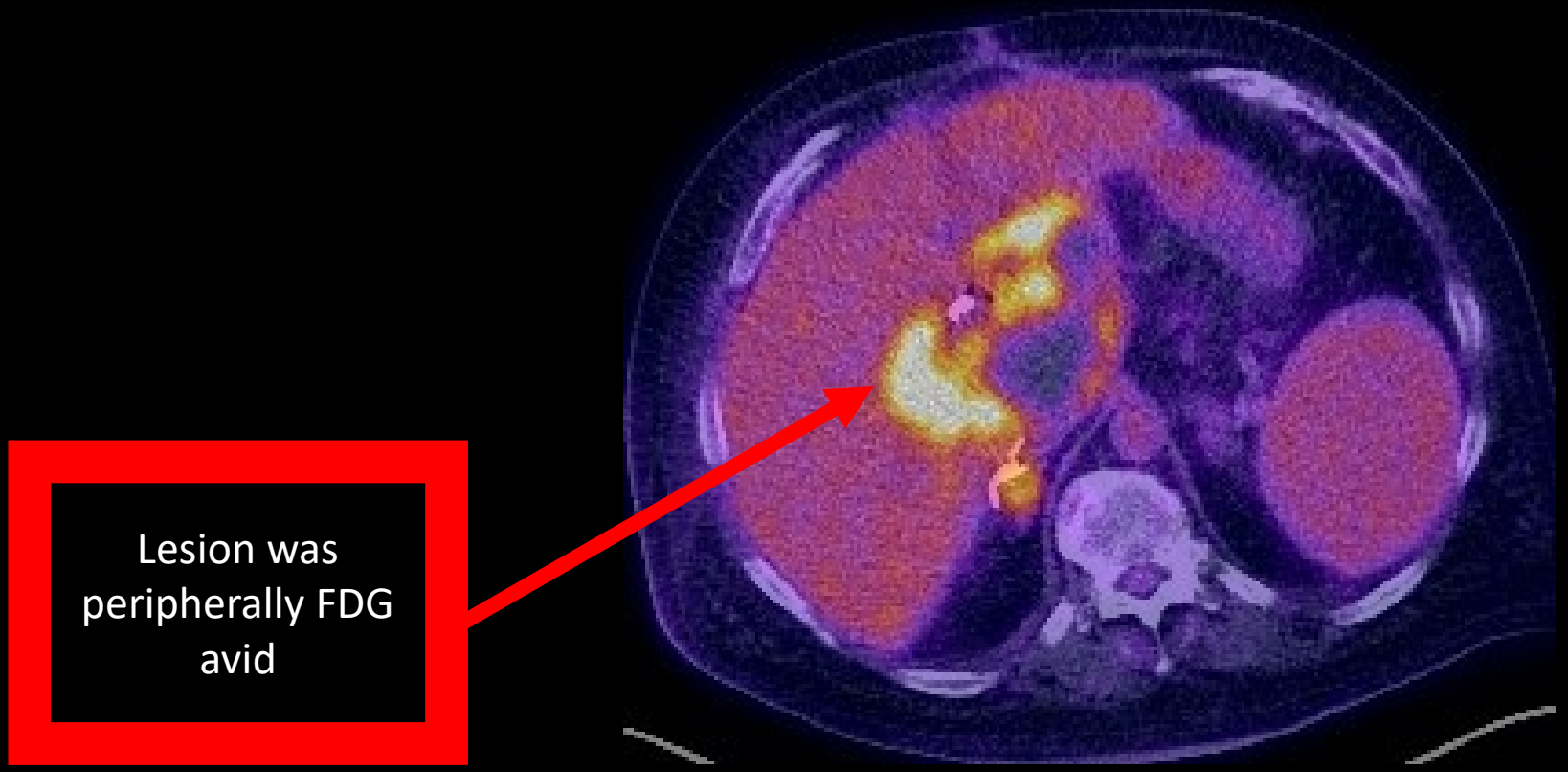
The mass was mildly hyperintense on T2WI with mild intrahepatic biliary dilation distal to the mass (arrow)

T1 post contrast



The mass was predominantly non-enhancing on post contrast images. Left portal vein was not opacified / thrombosed (arrow)

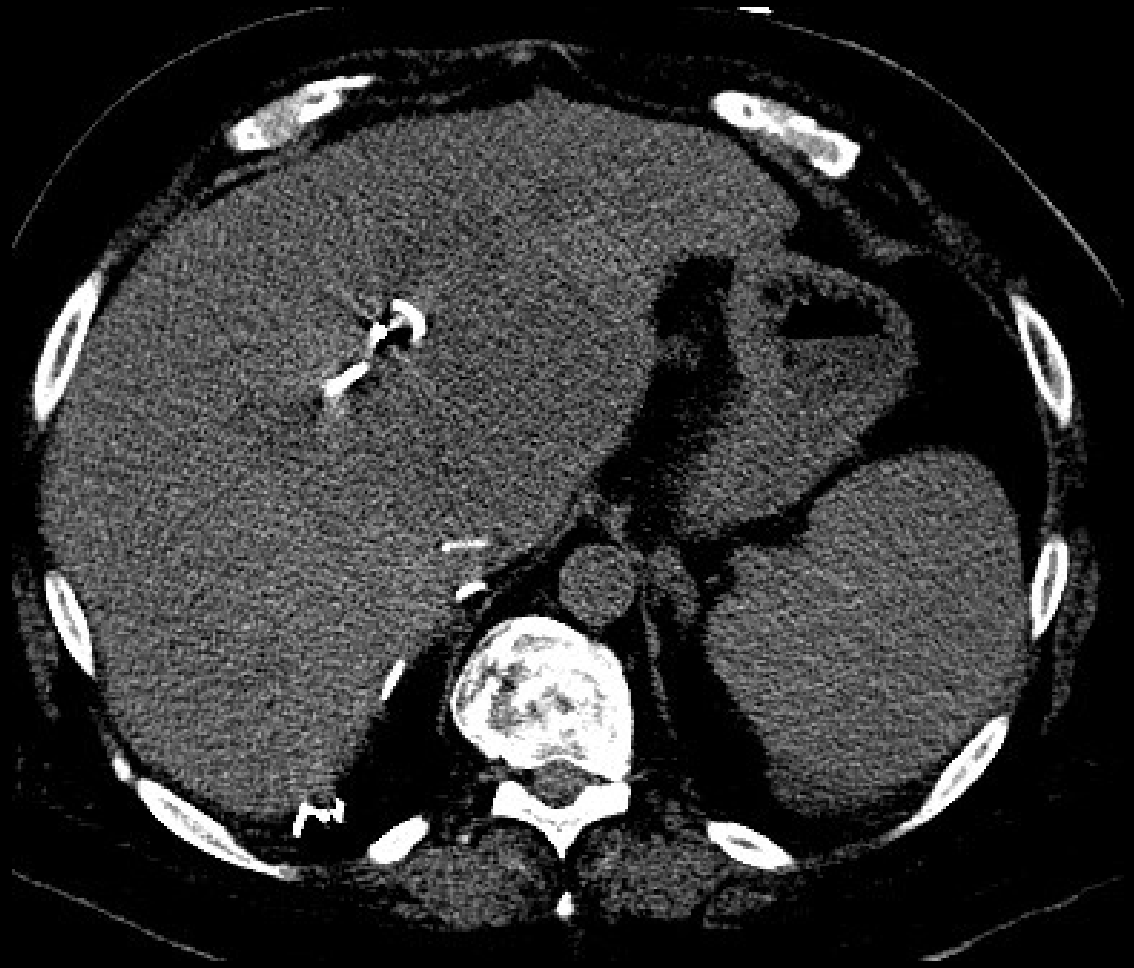
PET-CT Findings (labeled)



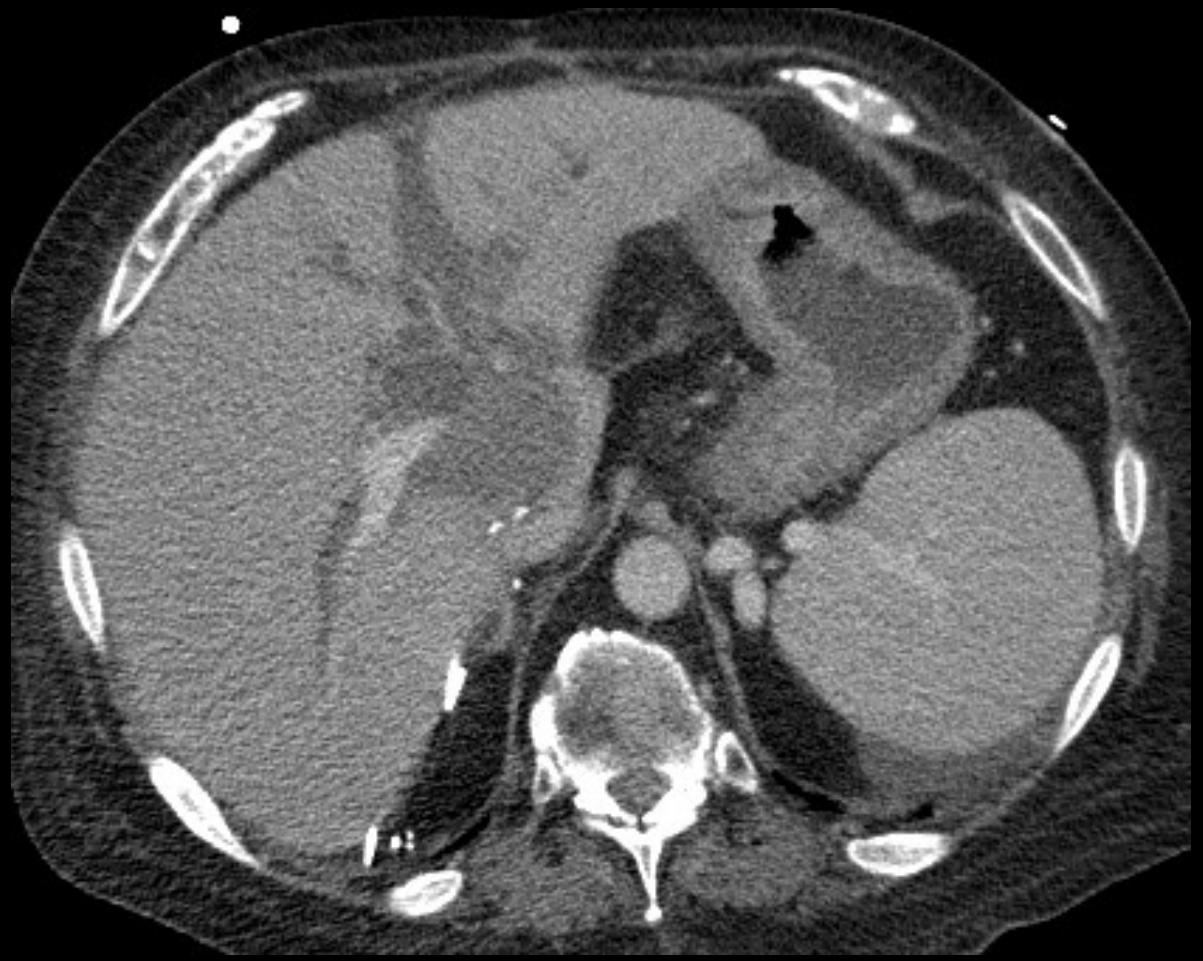
Biopsy-Proven Final Dx:

Post transplant lymphoproliferative disorder, monomorphic, diffuse large B cell type, EBV positive

Post R-CHOP CT demonstrates decrease tumor size



Pre Treatment



After Treatment

Case Discussion – Disease Overview

- Post transplant lymphoproliferative disorder involves uncontrolled proliferation of lymphoid cells
- Epstein-Barr virus can drives B-cell proliferation in setting of immunosuppression
- This disease is relatively uncommon in liver and kidney transplants (prevalence ~2%); It is more common in heart and intestinal transplants (prevalence ~5%)
- Typically classified into early lesion, polymorphic, or monomorphic (monomorphic represents one of the specific types of lymphoma)
- The disease frequently presents within 1 year of transplant

Case Discussion - Differential, & Management

- The liver is the most frequently involved PTLD organ and can have a focal deposit or diffuse infiltrative pattern.
- Hepatic lesions can mimic fungal infection or hepatic abscesses.
- Hence imaging in conjunction with clinical context and signs and symptoms of infection are important to differentiate between the differential differential diagnoses
- Treatment usually involves a combination of immunosuppression reduction to prevent lymphoid cell proliferation secondary to immunosuppression, surgical resection, and chemotherapy

References:

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