

AMSER Case of the Month

April 2023

42 year-old male with thrombocytopenia

Aashish Batheja, MS1

Jashanjeet Matharoo, MS2

Virginia Commonwealth University School of Medicine

Jay Pham, M.D.

Neeraj Lalwani, M.D.

VCU Health, Department of Radiology

Patient Presentation

HPI: 42 year-male presented initially as a referral for incidental thrombocytopenia found on routine lab. He denies excess bleeding or bruising, family history of blood disorders. He does drink 2-3 standard alcoholic beverages a week. No additional pertinent negatives or positives.

PMH: N/A

Meds: None

Allergies: NKDA

Vitals: T 36.8C ; BP 160/72; HR 55; RR ; SpO2 100%

ROS: Negative

Physical Exam: Unremarkable

Pertinent Labs

Basic Metabolic Panel: Within normal limits

CBC:

Plt – 142 (low)

Hgb –12.7 (low)

LFT:

AST – 40 (mildly elevated)

ALT – 34 (mildly elevated)

COAG:

INR – 1

PT 13.9 → 16.8 (high)

What Imaging Should We Order?

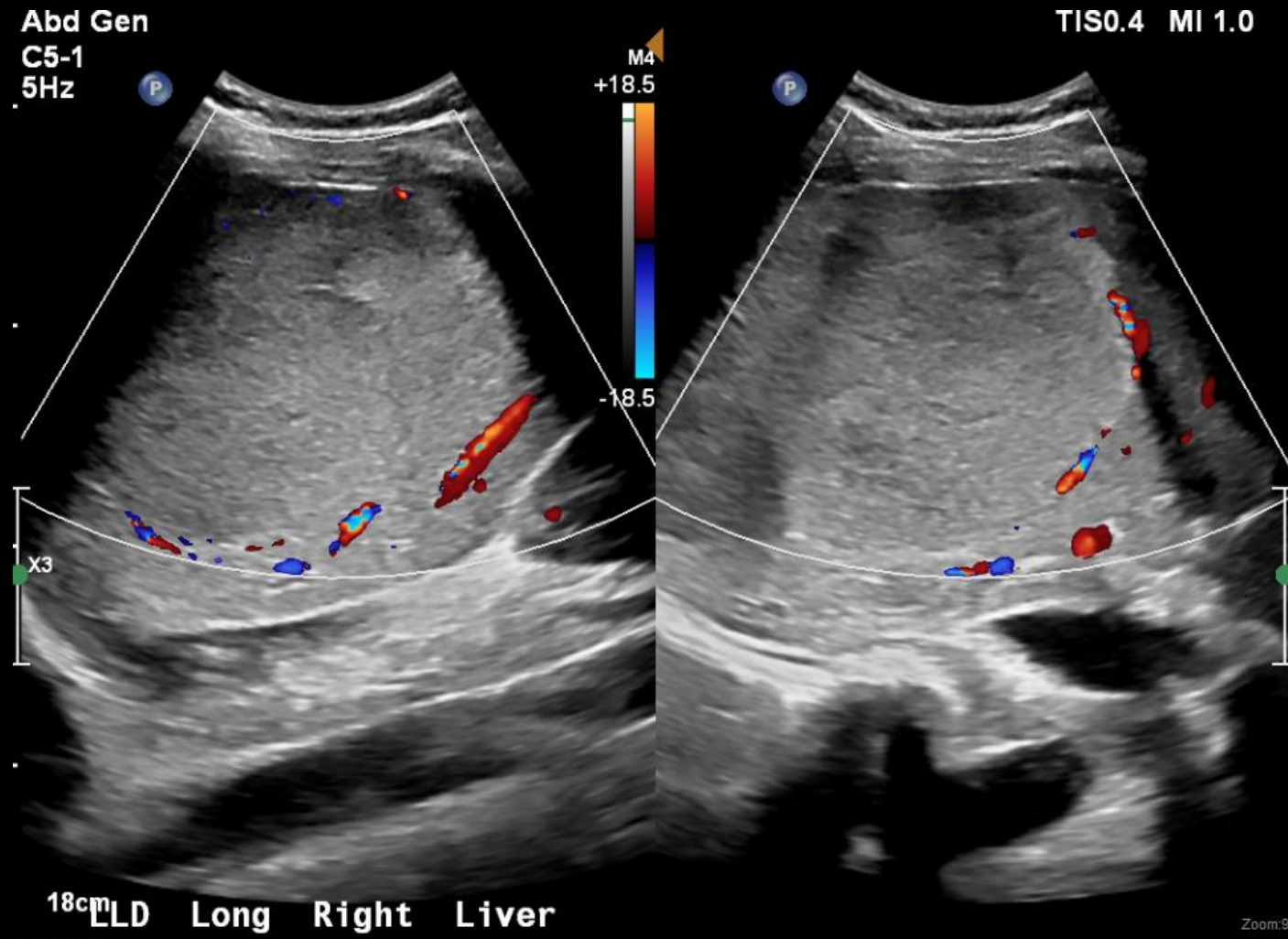
Select the applicable ACR Appropriateness Criteria

Variant 1: Indeterminate, greater than 1 cm liver lesion on initial imaging with US. Normal liver. No suspicion or evidence of extrahepatic malignancy or underlying liver disease.

Procedure	Appropriateness Category	Relative Radiation Level
US abdomen with IV contrast	Usually Appropriate	○
MRI abdomen without and with IV contrast	Usually Appropriate	○
CT abdomen with IV contrast multiphase	Usually Appropriate	☼☼☼
MRI abdomen without IV contrast	May Be Appropriate	○
Image-guided biopsy liver	Usually Not Appropriate	Varies
CT abdomen without IV contrast	Usually Not Appropriate	☼☼☼
Liver spleen scan	Usually Not Appropriate	☼☼☼
RBC scan abdomen and pelvis	Usually Not Appropriate	☼☼☼
CT abdomen without and with IV contrast	Usually Not Appropriate	☼☼☼☼
DOTATATE PET/CT skull base to mid-thigh	Usually Not Appropriate	☼☼☼
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	☼☼☼☼
Octreotide scan with SPECT or SPECT/CT chest and abdomen	Usually Not Appropriate	☼☼☼☼

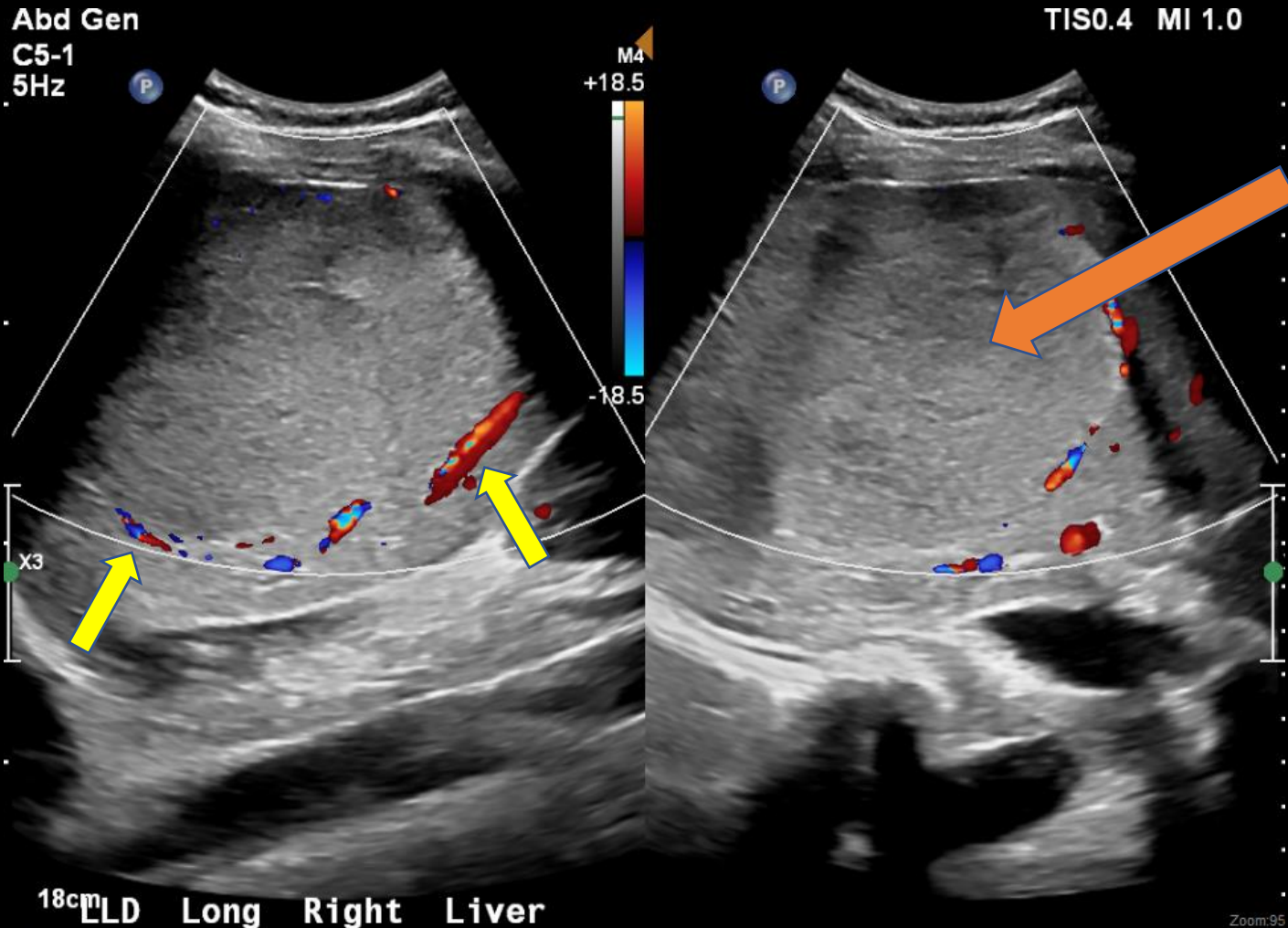
This imaging modality was ordered after abdomen US evaluating splenomegaly revealed liver lesion

Findings (unlabeled)

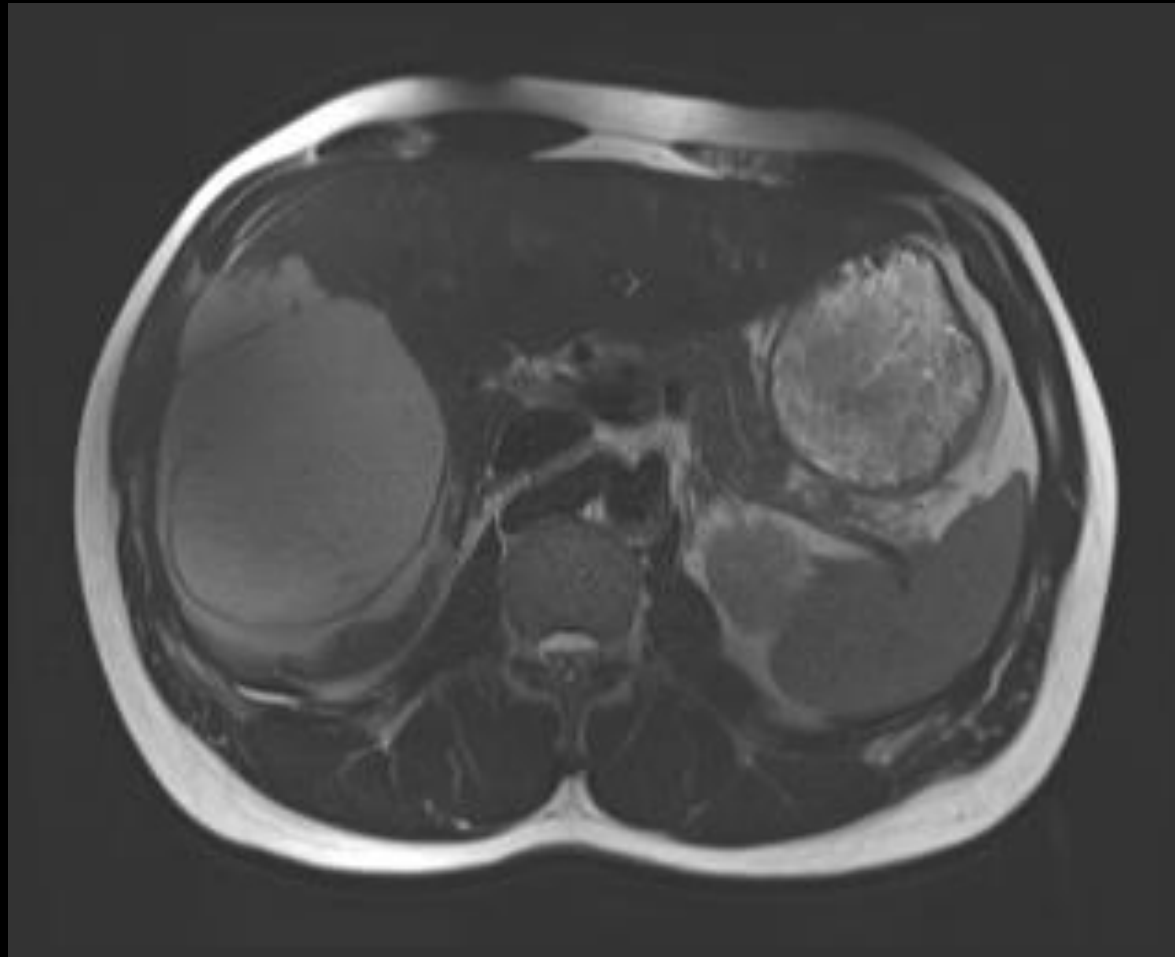


Findings (labeled)

Doppler ultrasound abdomen revealed a large heterogenous lesion on the right liver lobe with peripheral regions of blood flow.



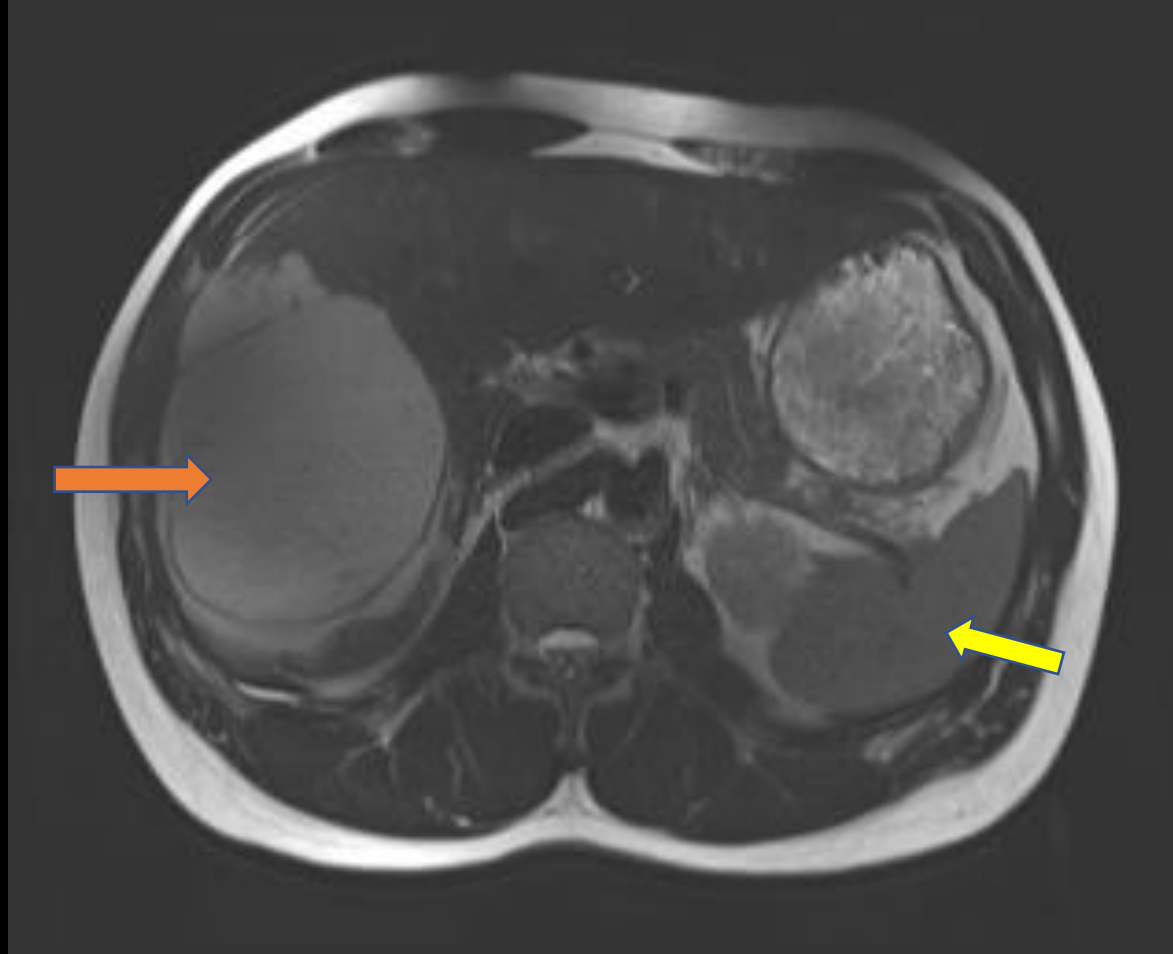
Findings (unlabeled)



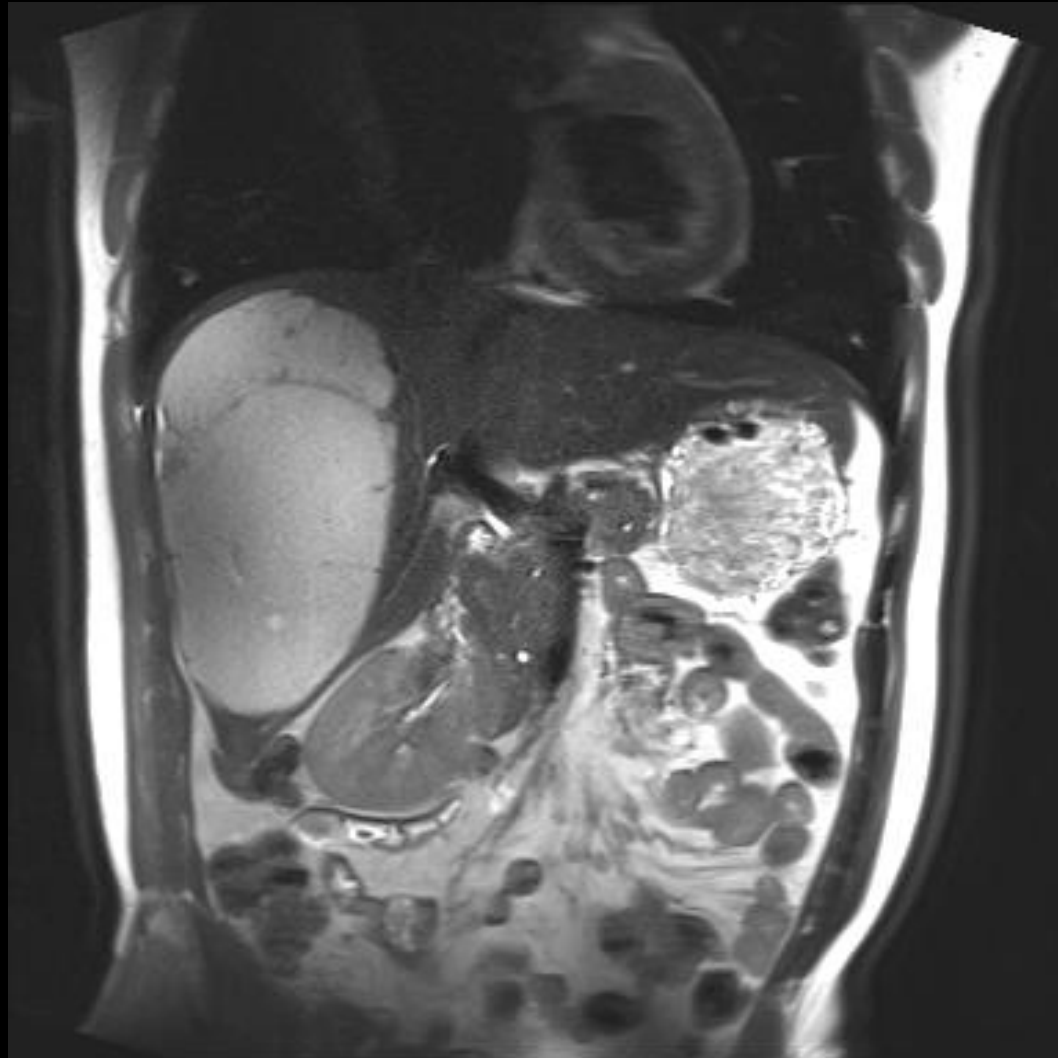
Findings (labeled)

Large right hepatic lobe mass with homogenous T2-hyperintensity.

Spleen with splenomegaly and similar MRI characteristic lesion not well-selected in this image.

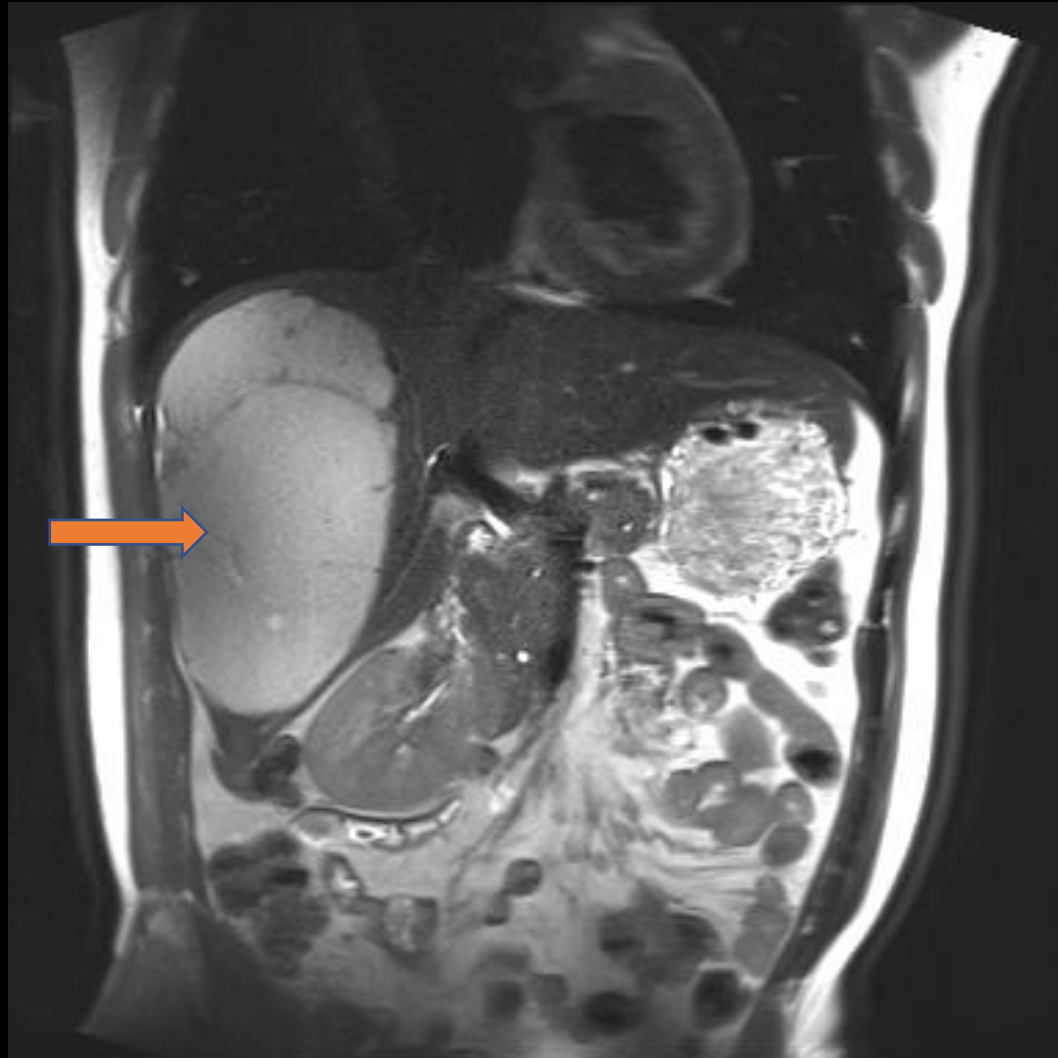


Findings (unlabeled)

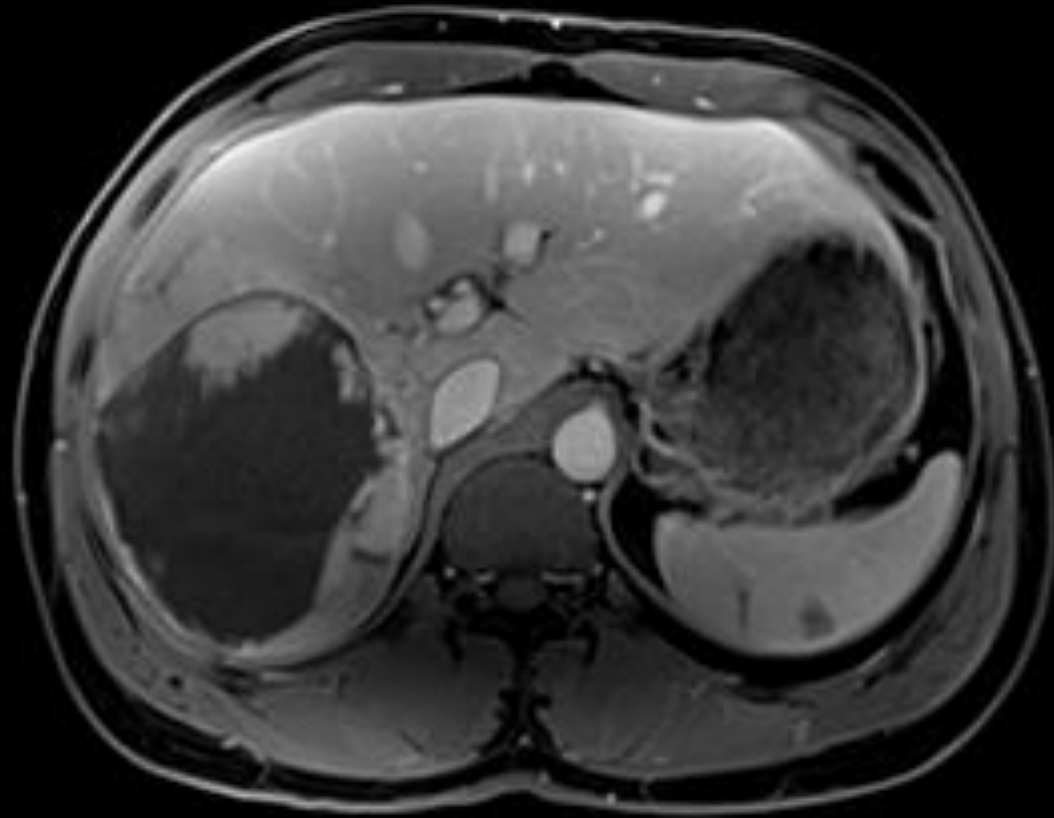


Findings (labeled)

Same **right hepatic mass**
in coronal-view.

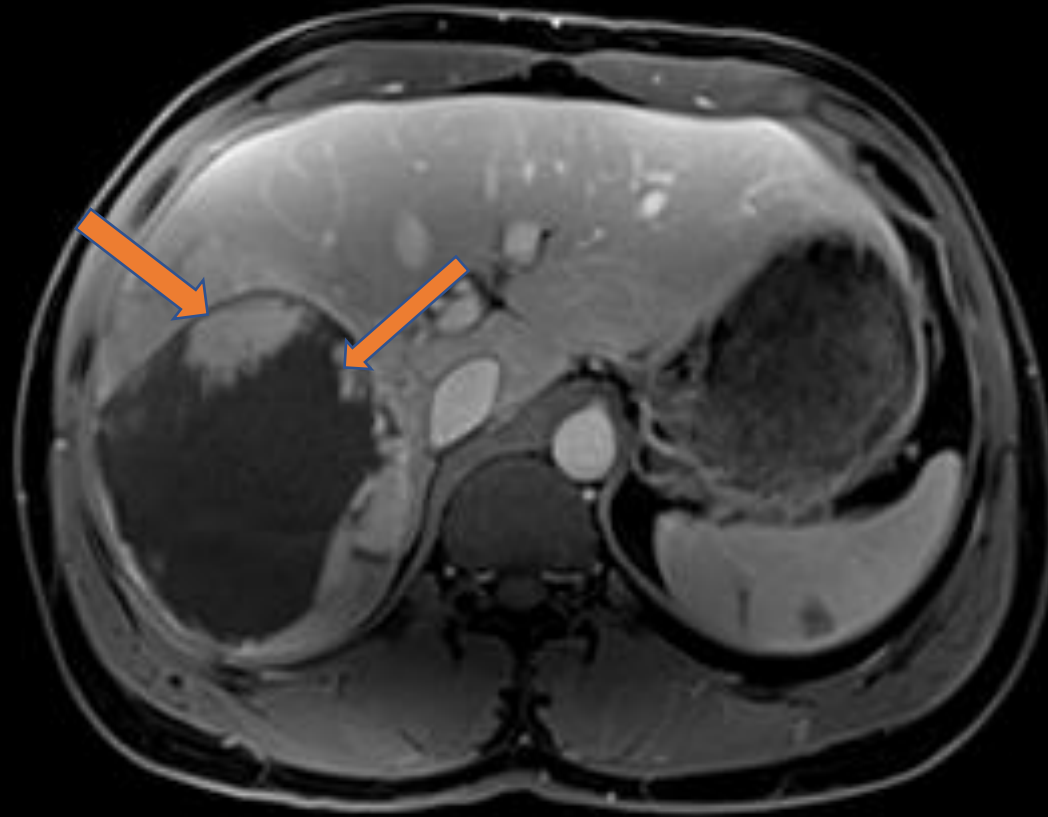


Findings (unlabeled)

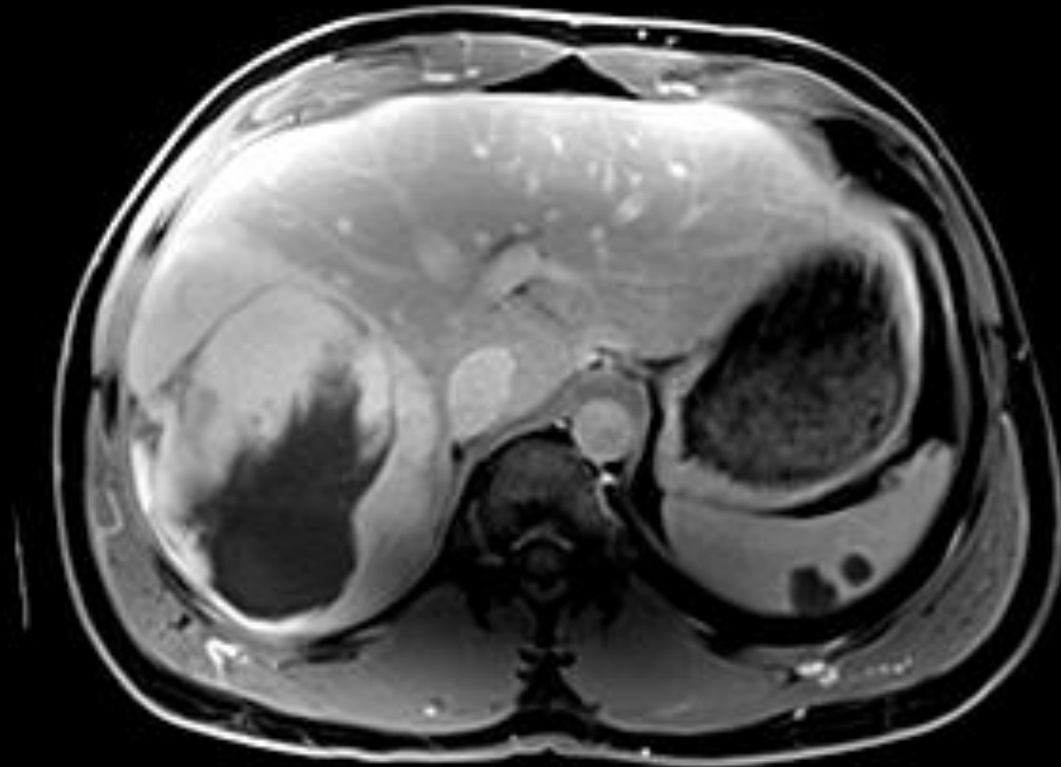


Findings (labeled)

T1-post contrast demonstrates **peripheral nodular enhancement**.

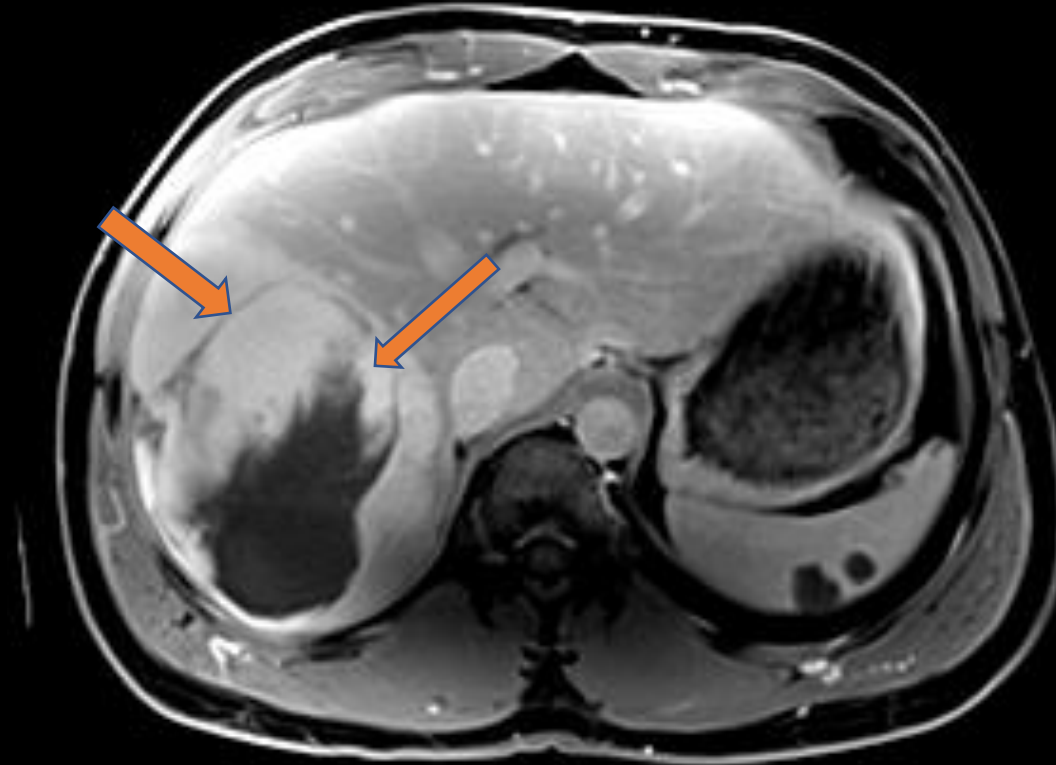


Findings (unlabeled)

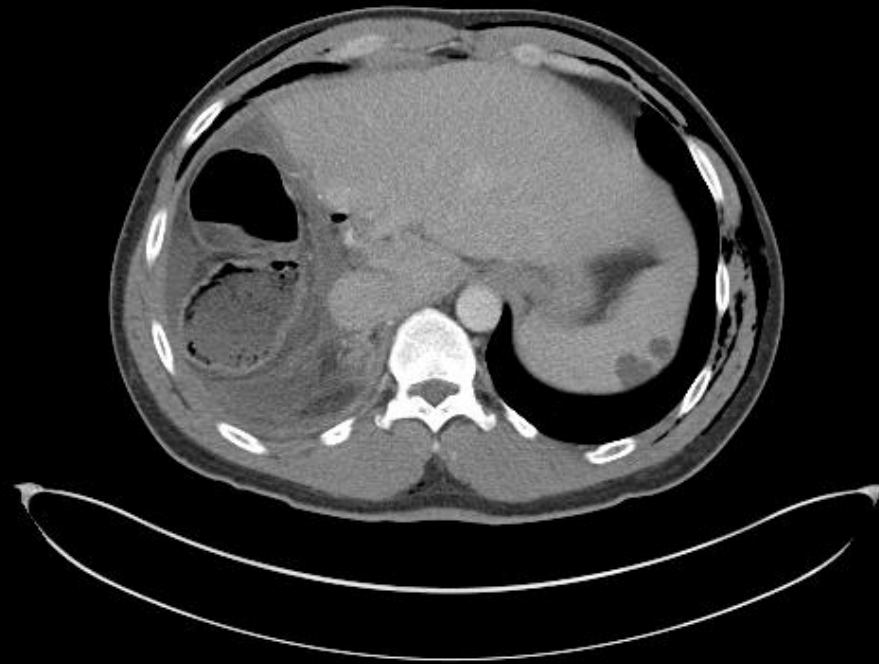


Findings (labeled)

T1-post contrast (delayed) demonstrates **progressive centripetal enhancement**.

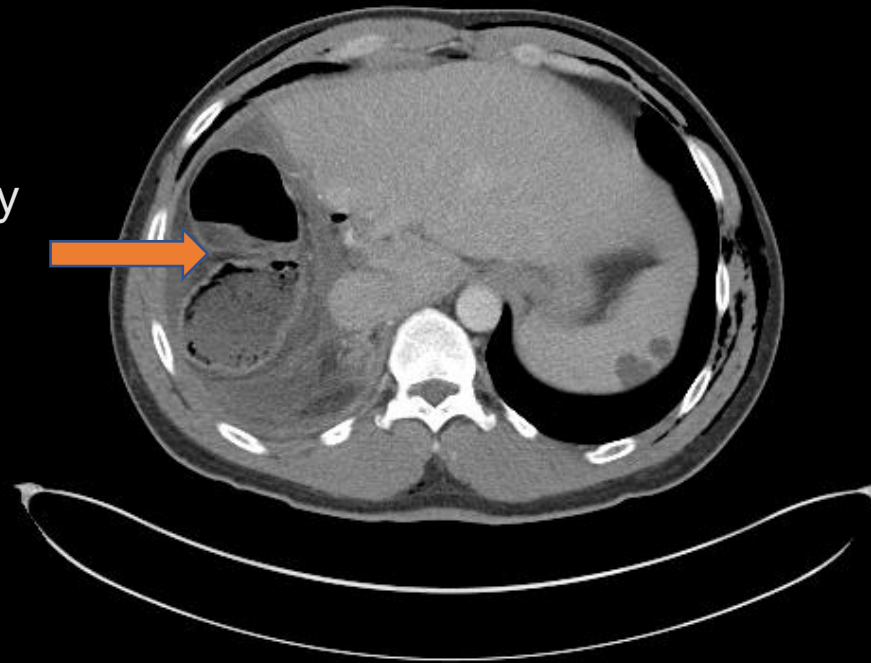


Post operative findings (unlabeled)



Post operative findings (labeled)

Status post-right hepatectomy
with postsurgical cavity
containing fluid and air.



Final Dx:
Giant hepatic hemangioma associated with
thrombocytopenia and coagulopathy

Giant hepatic hemangioma

Etiology: Hepatic hemangioma is a benign liver tumor with a collection of blood vessels connected to hepatic arterial circulation. The cause is likely congenital with a potential genetic component. They are typically found in the periphery of the liver.

Clinical Presentation: Usually asymptomatic but can present with upper right abdominal pain, nausea, vomiting, early satiety. Most cases are found incidentally during imaging for other conditions.

Differential Diagnosis: Focal hepatic steatosis (on ultrasound), Hepatic cyst (on noncontrast MRI), Hemangioendothelioma

Giant hepatic hemangioma (cont.)

Diagnosis: Findings on ultrasound, contrast-enhanced cross sectional imaging CT/MRI, Scintigraphy

Treatment: May not need treatment if there are no abnormal signs or symptoms. However, hepatectomy may be considered if there is a risk of rupture or thrombocytopenia.

Outcome & Significance

The outcome of this case was surgical consult for **surgical resection** and **right hemihepatectomy** that resolved the patient's thrombocytopenia.

The significance of this case is in demonstrating potential complications of hepatic hemangioma. Initial workup of thrombocytopenia includes a variety of laboratory data, focusing on hematology labs. Based on symptoms, ultrasound is a great first diagnostic tool. Hemangioma does not usually demonstrate internal vascularity on ultrasound secondary to low internal blood flow. MRI is often diagnostic.

Another entity to consider for this case is **Kasabach-Merritt Syndrome**, which is recurrent thrombocytopenia and coagulopathy associated with multiple cutaneous/systemic hemangiomas.

References:

Ho Thi Nhu Q. Hepatic hemangioma. Radiopaedia. Published September 3, 2022. Accessed October 9, 2022. <https://radiopaedia.org/articles/hepatic-haemangioma-3?lang=us>

Liver hemangioma. Mayo Clinic. Published 2017. Accessed October 9, 2022. <https://www.mayoclinic.org/diseases-conditions/liver-hemangioma/symptoms-causes/syc-20354234>

Bajenaru N, Balaban V, Săvulescu F, Campeanu I, Patrascu T. Hepatic hemangioma -review-. *J Med Life*. 2015;8 Spec Issue(Spec Issue):4-11.

Smock KJ, Perkins SL. Thrombocytopenia: an update. *International Journal of Laboratory Hematology*. 2014;36(3):269-278. doi:10.1111/ijlh.12214

Liu J, Ma J, Yang C, et al. Impact of TIPS on Splenic Volume and Thrombocytopenia. *American Journal of Roentgenology*. 2021;216(3):698-703. doi:10.2214/ajr.20.22958

Grizzard, J. MD, Hemangioma. Statdx.com