

Rad Path Case of the Month

39 year old female presents with early satiety

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Patient Presentation

- **HPI:** 39 y/o F with fatigue, early satiety, and stomach discomfort was found to have incidental exophytic liver mass.
- **Past Medical History:** Asthma, Depression, Seasonal Allergies
- **Past Surgical History:** No prior surgeries
- **Medications:**
 - 20 year hx of Ortho-Cyclen, Adderal, Cymbalta, Synthroid
- **Physical Exam:** Palpable RUQ abdominal mass with liver edge extending 2 inches inferior to the costal margin

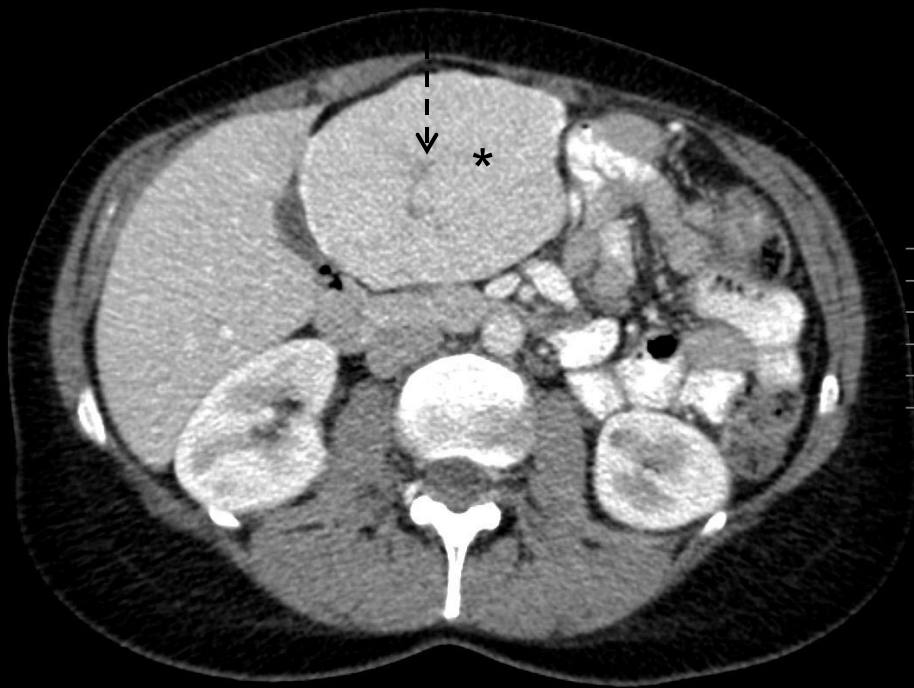
Pertinent Labs

- PT: 13.1, INR:1.0
 - AST: 20
 - ALT:23
 - Alkaline Phosphatase: 87
 - Total Bilirubin: 0.3
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- CT and MRI were ordered

Abdominal CT

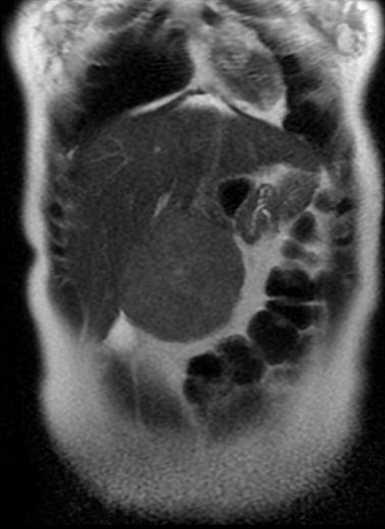


Abdominal CT



8cm solid exophytic mass off of left lateral segment (segment 3) of the non cirrhotic liver. Note the central scar (dashed arrow) and the prominent collateral vessels (solid arrow).

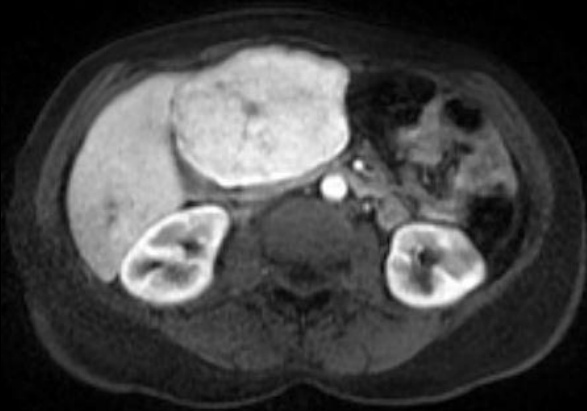
Coronal T2



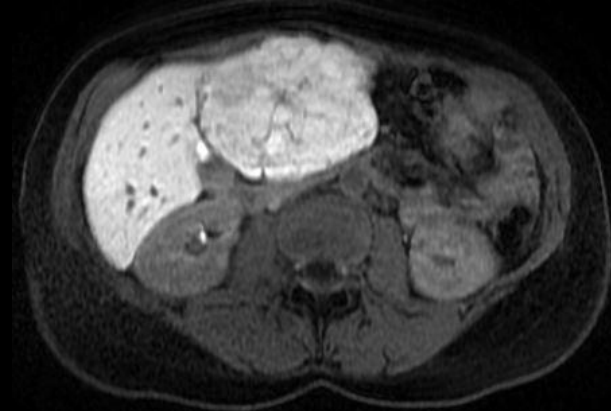
Axial T1



T1 Post Contrast (Arterial Phase)



T1 Post Contrast (20 Minute Delay)



Coronal T2



Axial T1



T1 Post Contrast (Arterial Phase)



T1 Post Contrast (20 Minute Delay)



8cm solid hypervascular mass (arterial enhancement) which retains contrast at 20 minutes. Note the central scar (arrow)

Differential Diagnosis Based on Imaging

- Focal Nodular Hyperplasia
- Hepatic Adenoma
- Hepatocellular Carcinoma
- Hemangioma
- Metastases
- Lymphoma

Patient Underwent Partial Liver Resection of Left Lateral Lobe



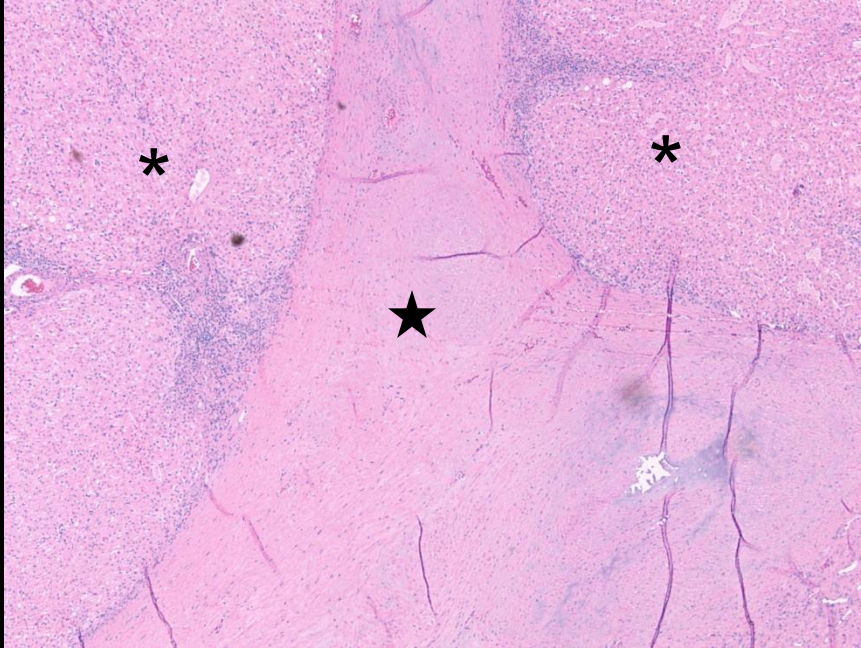
Gross Specimen



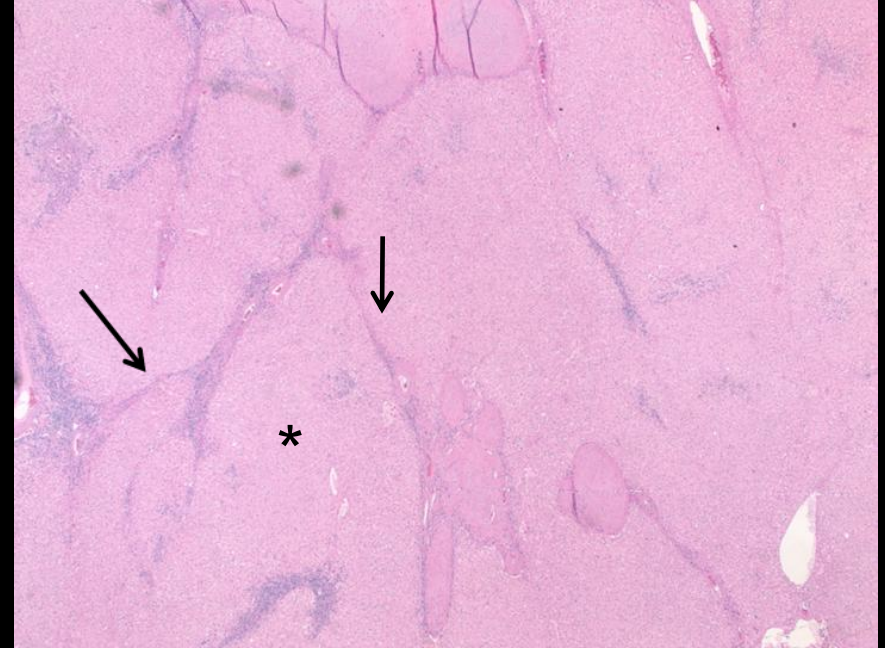
Gross Specimen (Note Central Scar)



Pathology / Histology



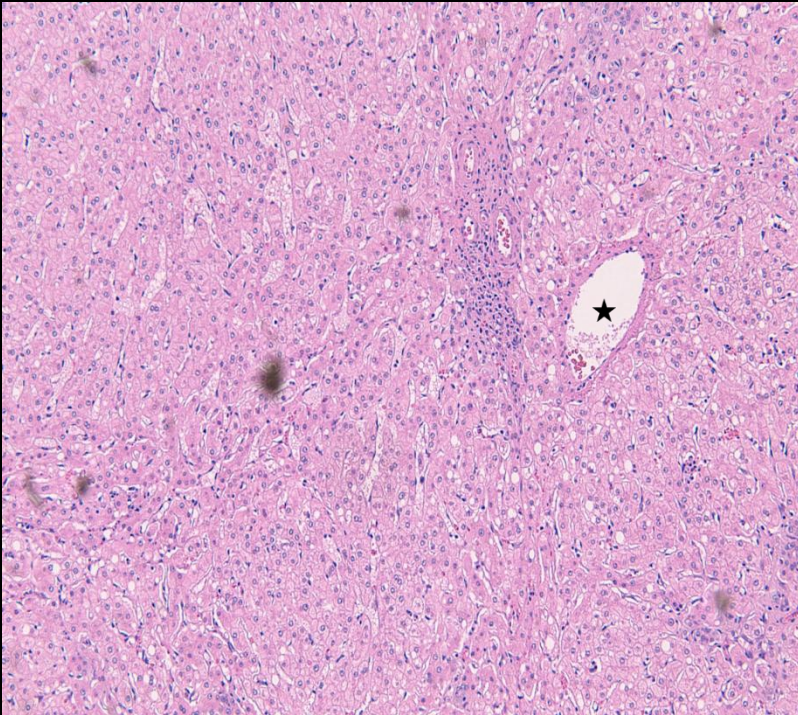
H&E Stain, low power



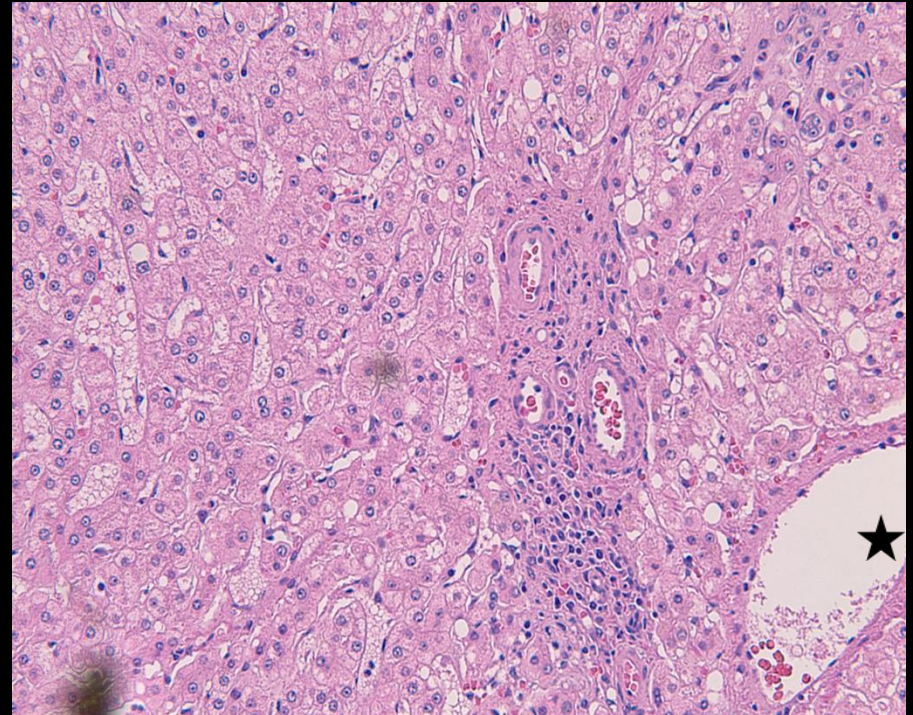
H&E Stain, low power

- Fibrotic scarring (star) closely mimicking cirrhosis.
- Fibrous septa (arrows) extend from central scar into periphery, separating areas of multiple small nodules of normal appearing hepatocytes (asterisk)

Pathology / Histology



H&E Stain, low power



H&E Stain, high power

- Scar-like tissue within nodules are often composed of abnormally large, thick walled vessels, including large feeding arteries (star), portal veins, and bile ducts.
- Variable degree of bile ductular reaction helps differentiate from hepatic adenoma

Final Diagnosis

- Focal Nodular Hyperplasia

Discussion

- Hyperplastic response of hepatic parenchyma to preexistent arterial malformation usually around a fibrous scar
- 2nd most common benign liver tumor after hemangioma
- Most common seen in women of reproductive age
- Exogenous estrogens have been shown to increase the size of these lesions.
- Usually asymptomatic and solitary but up to 20% can be multiple.
- If symptomatic (like this patient), can be removed
- No malignant potential

Radiology Diagnosis

- Hypervascular lesion in a non cirrhotic liver.
- MRI is exquisite for making the diagnosis.
- Gadoxetate disodium (also known by the tradename Primovist) is a hepatospecific paramagnetic gadolinium-based contrast agent, used specifically in MRI liver imaging. Its primary use is in hepatic lesion characterization.
- Delayed imaging with hepatobiliary agents will show retained contrast within the lesion, confirming the diagnosis.

References

1. <https://radiopaedia.org/articles/gadoxetate-disodium?lang=us>
2. <https://radiopaedia.org/articles/focal-nodular-hyperplasia?lang=us>
3. Kondo F, Nagao T, Sato T, et al. Etiological analysis of focal nodular hyperplasia of the liver, with emphasis on similar abnormal vasculatures to nodular regenerative hyperplasia and idiopathic portal hypertension. *Pathol Res Pract* 1998; 194:487.
4. <https://www.uptodate.com/contents/focal-nodular-hyperplasia>
5. <http://www.pathologyoutlines.com/topic/livertumorFNH.html>