

Case Presentation

Meghana Ghattu
PGY7 GI Fellow

Disclosures

- None

Part one

Case:

- A 51-year-old woman was referred to Hepatology for further evaluation of elevated liver enzymes.
- HPI:
 - Initially found to have elevated enzymes by PCP during annual physical on routine lab work.
 - Patient reports being told that her enzymes were “high” in the past as part of her life insurance physical.
 - Denies any current symptoms and focused GI ROS was negative besides intermittent epigastric pain, not related to meals or BMs.
 - Complains of joint pain when walking and walking up stairs

Case:

- PMH: HTN, HLD, Hypothyroidism, Asthma
- PSH: Cholecystectomy 2016 for biliary colic
- Allergies: seasonal, Bactrim (rash)
- Family Hx:
 - Father with cirrhosis of the liver who reportedly “was a drinker”
 - Mother with HTN, diabetes, thyroid disease and rheumatoid arthritis
 - Sister with psoriasis

Case:

- Social Hx:

- Born in NJ, parents from Nigeria
- Works as a teacher
- 1-2 glasses of wine every week, rarely 3-4 on special occasions
- Denies any tobacco use or recreational drug use

- Medications:

- Amlodipine 10mg daily
- Rosuvastatin 10mg nightly
- Levothyroxine 88mcg daily
- Albuterol HFA 2 puffs as needed
- Multivitamin
- Milk Thistle
- Turmeric for joint pain

Case

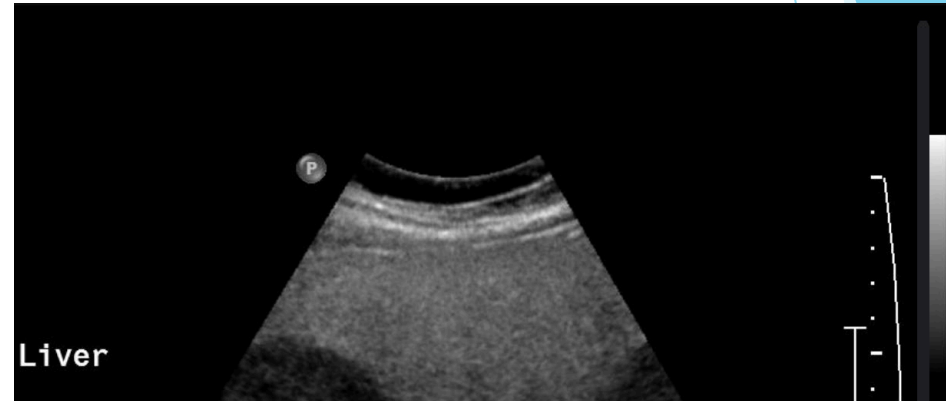
- Physical Exam:
 - VS: HR 65, BP 145/70, RR 12, O2 98% on RA, **BMI: 31.18 kg/m²**
 - Skin, Pulm, CV, Abdominal, Neurologic exam unremarkable.
- Laboratory values:

CBC	
WBC	4.2 (3.4 - 10.8 x10E3/uL)
Hgb	14.0 (11.1 - 15.9 g/dL)
Hct	42.5 (34.0 - 46.6 %)
Plt	155 (150 - 450 x10E3/uL)

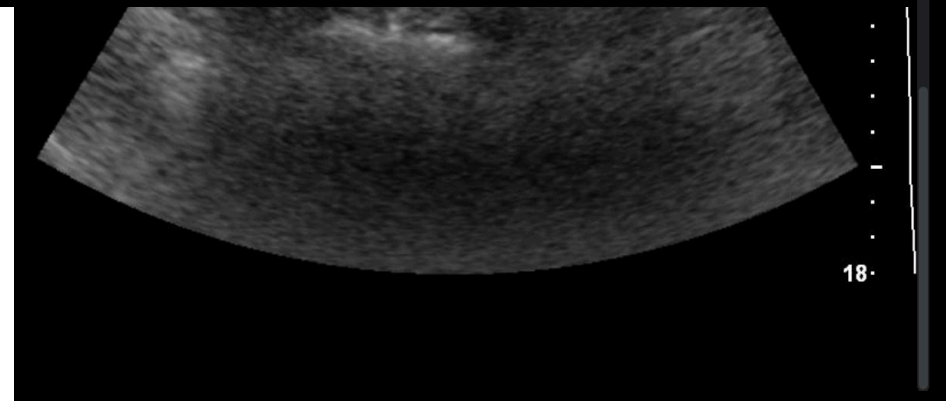
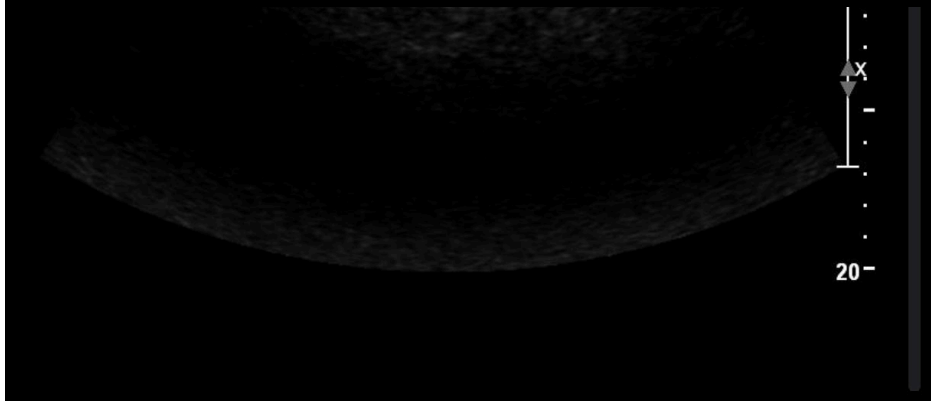
BMP	
Na	141 (134 - 144 mmol/L)
K	4.6 (3.5 - 5.2 mmol/L)
Cl	105 (96 - 106 mmol/L)
CO2	21 (20 - 29 mmol/L)
BUN	16 (6 - 24 mg/dL)
Cr	0.77 (0.57 - 1.00 mg/dL)

Hepatic Function Panel	
AST	64 (0 - 40 IU/L)
ALT	51 (0 - 32 IU/L)
ALP	156 (41 - 116 IU/L)
Tbili	1.8 (0.0 - 1.2 mg/dL)
Albumin	4.5 (3.9 - 4.9 g/dL)
Total Protein	6.9 (6.0 - 8.5 g/dL)

Imaging



Right upper quadrant US: Liver 17.2cm, increased hepatic echogenicity, Cholecystectomy. No significant biliary duct dilation.



Case

- Differential Diagnosis

Additional Workup

Infectious Disease	
HAV total	Negative
HBsAg	Negative
HBcoreAb	Negative
HBsAb	Positive
HCV Ab	Negative
HIV Ag/Ab	Negative

Autoimmune	
ANA	Positive 1:160(<1:40)
AMA	Negative
ASMA	Positive 1:40 (<1:20)
IGG	1242 (586 - 1,602 mg/dL)
Anti-LMK	Negative
Anti-SLA	Negative

Iron Studies	
Ferritin	397 (15-150 ng/mL)
Iron	133 (27-159 ug/dL)
Iron Sat	36 (15-55%)
TIBC	370 (250 - 450 ug/dL)

Lipid Panel	
Cholesterol	201 (<200 mg/dL)
Triglycerides	157 (<150 mg/dL)
HDL	46 ($\geq$ 40 mg/dL)
LDL	128 (<100 mg/dL)

A1AT: 126 (100-200 mg/dL)

Ceruloplasmin: 17.6 (16.0 - 31.0 mg/dL)

Alcohol level: negative

PETH: negative

Direct Bilirubin 0.4

HFE Gene testing: H63D heterozygous mutation

HbA1c: 5.7 (Pre-DM 5.7-6.4%, DM >6.4%)

Part two

Follow up

- Etiology of liver disease suspected to be MASLD
- Identified risk factors: HLD, Pre-DM, Obesity class
- VCTE (Fibroscan): 10.3 kPA (F3 fibrosis) and CAP 313 dB/m (S3 steatosis)

Follow Up

Risk Calculator	Result	Low Risk	Indeterminate	High Risk/Adv Fibrosis
FIB-4	2.95	<1.3	1.3-2.7	>2.67
APRI	1.4	<0.5	0.5-1.5	>1.5 (>2 = cirrhosis)
Agile 3+	0.69	<0.45	0.45-0.68	>0.68
SAFE score	134	<0	0-100	>100 (>F2 fibrosis)

Summary: All four calculators flag this patient as high risk for advanced fibrosis – FIB-4, APRI, Agile 3+, and SAFE scores all fall above their respective high-risk cutoffs.

Follow Up

- What is the next step in treatment.

Part three

Follow up

- Given MASLD with advanced fibrosis (F3) on non-invasive testing, patient was recommended to start a multimodal weight loss plan including Green Mediterranean diet, exercise with resistance bands and using an exercise bike
- Referred to nutrition and exercise program with ~10lbs weight loss from lifestyle modification alone.
- Follow up liver tests: not improved
- Liver biopsy pursued.

Follow Up

- Liver biopsy was performed to rule out other conditions, with:
 - 45% macrovesicular steatosis
 - Glycogenated nuclei noted
 - Rare eosinophils noted
 - Average of 4 foci of lobular inflammation per high powered field
 - Significant ballooning degeneration of hepatocytes significant
 - Trichrome stain done showing pericellular fibrosis with occasional bridging
 - NAS Score of 6

Follow Up

- Patient was started on Tirzepatide
- Tirzepatide dose unable to be escalated due to severe nausea, discontinued early and switched to semaglutide.
- Semaglutide better tolerated although only able to escalate to 1 mg weekly.
- At 6 month follow up visit reported 6lbs weight gain despite efforts, net -4lbs since MASLD diagnosis.

Follow Up

- Aminotransferases remained elevated, AST/ALT 58/54
- Resmetirom initiated, with initial rise in aminotransferases
 - Statin stopped, PCSK9 inhibitor started, but improvement in LFTs still not seen
 - Repeat fibroscan/VCTE at 6 months did not show any improvement
- Patient was not interested in metabolic surgery or endoscopic weight loss procedures

Follow Up

- Next Steps.