7/10/23 Rafael Medina Subspecialty VMR with @CPSolvers

"One life, so many dreams" Case Presenter: Sarah Uttal (@SarahUttal) Case Discussant: Elliot Tapper (@ebtapper)

CC: 67 year old female presents to the clinic with severe pruritus.

HPI: A 67 year old female presents to the clinic to look for a different opinion about her itching. She also has dark spots on her skin for three years and has lost 100 pounds. She has had jaundice since 2020.

She presented in spring 2020 to the hospital for abdominal pain that resulted in ruptured appendix and received antibiotics at that time. Later that year, she came back for an abscess in the left lower quadrant and received augmentin. At that time, the alkaline phosphatase was 1000 and total bilirubin was 2.6.

PMH:
depression
Asthma
Ruptured appendix
COVID 19

Meds:
Escitalopram
Vit D
Ursodiol 300mg BID

Fam Hx: no family history of liver disease

Soc Hx: lives in the Midwest

Health-Related Behaviors:
No tobacco, IV drugs.
Drinks ½ glass of wine per week.

Allergies: Contrast

Vitals: T: 36.0 HR: 65 **BP:** 115/56 **RR: SpO2:** 98% on room air
Exam:
Gen: no acute distress
HEENT: Injected conjunctiva
CV: ⅛ systolic ejection murmur
Extremities/skin: dark spots and excoriations in her arms and trunk

Notable Labs & Imaging:
Hematology:
WBC: 6,500 Hgb:11.5 Plt: 277,000
Chemistry:
Na: 136 K: 3.9 Cl: 102 CO2: 28 BUN:23 Cr: 0.75 glucose: 95 **AST: 239 ALT: 235 Alk-P: 1339 T. Bili: 5.8 Direct Bili: 4.5** Albumin: 3.8 INR: 1.0
Hep Panel: negative
Iron saturation: 36%
Ferritin: 178
ANA positive, Anti Smooth muscle 1:20, Anti-mitochondrial positive
Total cholesterol : 364 LDL: 275 Triglycerides: 102
Ceruloplasmin: 64 (high) Vit D: 9 (low) AFP: undetectable, a1 antitrypsin: normal phenotype
Fractionated Alkaline phosphatase
Liver 1: normal **Liver 2: high** Bone: normal
Immunoglobulins: IgG: 1700 IgG3: high IgG4: normal
Imaging:
CT abdomen/pelvis: hepatomegaly, no masses. Spleen showed calcifications consistent with granulomas. **Liver biopsy**: moderate diffuse bile duct proliferation. No evidence of cirrhosis
MRCP: normal appearance of intrahepatic ducts. External compression of the right hepatic duct. Hepatic enhancement on the arterial phase. Multiple lymph nodes in the area.
Next step: getting another MRCP or ERCP with stenting.

Problem Representation:

Teaching Points (Bettina):
- **Cholestatic liver injury:** Drug-induced (review medication and supplement list with LiverTox), especially antibiotics (amox/clav which may be days to weeks, minocycline), mechanical obstruction of bile duct, COVID cholangiopathy, autoimmune
- **COVID cholangiopathy** is a late complication of severe COVID-19, usually those on ECMO, leading to severe liver injury and subsequent biliary damage
  - May necessitate transplant
  - Typically a bad prognostic sign
- Findings may include jaundice, presence of excoriations, signs of chronicity (xanthelasma, asterixis, muscle wasting, malnutrition, spider angioma)
- Management of **itching**
  - Typically on trunk and arms and worsens at night (helpful to rate the severity)
  - **Ursodiol** is safe and may treat the underlying condition in many cases, but there is *no evidence that it treats itching* in biliary diseases except in cholestasis of pregnancy
  - Advise first to moisturize after showering and take benadryl/hydroxyzine at bedtime in case of dry skin
  - First-line is **cholestyramine 4g BID** on an empty stomach, then titrate down to minimum effective dose
  - Second-line is **rifampin** (modulate transduction of itch in the dermis), **naltrexone** (reduces sensation of itch), and **sertraline;** UV therapy and drainage can be used
    - Naltrexone was shown to not have safety signals in those with cirrhosis
- Elevated cholesterol can suggest chronicity and low vit D may be due to dec absorption
- If you have an obstruction of the large duct due to PSC, you can go cirrhotic very quickly
- GGT is elevated in **all** liver diseases (e.g., both alcoholic and NAFLD) and may not be helpful; fractionated alkaline phosphatase can be ordered instead
- Autoimmune hepatitis usually has elevated IgG (which also appears in cirrhosis) which can be diagnosed by liver biopsy (correlate SMA levels with scoring system)
- Getting a new scan (MRI + MRCP>CT) is obligatory upon new consult; **Cross-sectional imaging is the bedrock of cholestatic liver injury evaluation**
- Differentials of vascular obstruction causing compression on the biliary tree include cavernous transformation (varices formed off the portal vein in response to thrombosis, which can choke off the bile duct) and hepatic artery indenting on hepatic ducts
  - Stent vs. reconstruction of bile duct
- The more liver that is affected, the higher the ALT and AST
- Cumulative incidence of PBC in those with positive AMA is 15% at 10-20 years