10/17/23 Morning Report with @CPSolvers

"One life, so many dreams" Case Presenter: Shreyas (@shreyas_rn) Case Discussants: Ravi (@rav7ks) and CPSolvers Team

CC: 42-year-old male patient with generalized yellowing of skin and eyes worsening over the past 3 days.

HPI:
Denies any abdominal pain, vomiting, diarrhea, chest pain, or SOB.

In the ED, patient was alert and oriented.

PMH: Appendectomy 3 weeks ago, was discharged on abx (Augmentin), that he took for 10 days

Meds: None

Fam Hx: None

Soc Hx:
No recent travel, no sick contacts, drinks 2-3 beers on weekends sometimes, non smoker, no illicit drug use

Health-Related Behaviors: None

Allergies: NKDA

Vitals: T: HR: 66 **BP:** 132/80 **RR:** 13 **SpO2**: 99% on RA
Exam:
Gen: alert and oriented x4. Yellowish discoloration of face, sclera, palm and trunk
CV: S1 S2 normal
Abd: nontender, nondistended, soft to palpation, no rebound, guarding, or rigidity. No evidence of hepatosplenomegaly

Notable Labs & Imaging:
Hematology:
WBC: 7000 Hgb: 14 Plt: 150,000

Chemistry:
Na: 136 K: 3.5 Cl: 106 bicarb 23 BUN: 11 Cr: 0.6 Ca: 9.3 Mag: 1.6
AST: 62 ALT: 63 Alk-P: 600 Total-bilirubin: 20 direct 16.8 indirect 3.2 GGT: elevated haptoglobin 55 (normal)
Anti-hepatitis B surface antibody positive, ceruloplasmin normal,
ANA negative, antimitochondrial antibody negative, anti smooth antibody negative, TSH 1.3
Imaging:
US: increased liver echogenicity, gallbladder with biliary sludge and gallstones, negative murphy sign, non dilated common bile duct 4.3 mm (normal)
CT: normal, no masses or lesions seen
MRCP: no CBD dilation, no CBD stones seen

Dx: Augmentin Induced Cholestatic Liver Injury

Problem Representation: 42 y/o male with recent appendectomy discharged with antibiotics 3 weeks ago, presenting with acute jaundice with labs suggestive of cholestatic liver injury with increased ALP and GGT, and imaging negative.

Teaching Points (Reshma):
- Jaundice → Hyperbilirubinemia → Etiologies could be (**prehepatic, intrahepatic and posthepatic**)
- in a young patient consider: **PBC, PSC**
- Antibiotics could contribute to LFT elevation (eg. augmentin or any beta lactam)
- Find basal level of LFTs before arriving at a conclusion
- **Gall bladder surgery** - could cause biliary leakage and sepsis
- Chronic liver injury and cirrhosis - abdominal findings (ascites)
- **'When you hear hoof beats - think horses not zebras'** think of the recent surgery, treatment given during and after the surgery and post surgery transfusion
- Medication can cause severe cholestasis.
- Complication of a lap surgery - hematoma could compress the bile duct and cause obstructive jaundice.
- Intrahepatic/extrahepatic could also cause direct bilirubin elevation
- Opioid could cause oddi of sphincter contraction causing an extrahepatic cholestasis picture
- Post surgical adhesions, intrahepatic trauma to the biliary system
- **https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3291137/ (The value of hyperbilirubinemia in the diagnosis of acute appendicitis)**
- Hyperbilirubinemia is a valuable marker for acute appendicitis. Patients with hyperbilirubinemia are also more likely to have appendiceal perforation or gangrene. **Bilirubin should be included in the assessment of patients with suspected appendicitis.**
- 5-nucleotidase, ALP, GGT - if normal, it could be a non hepatic source
- Antibiotics - Augmentin and the beta lactams (typically the clauvulanate could cause the cholestasis) could cause significant cholestasis. Could present even after a significant time of 2 weeks.
- Vanishing bile duct syndrome could be a differential.
- Augmentin could cause liver injury causing elevation of all the LFts but could also cause just cholestaisis without any significant liver injury