A Rare Presentation of Primary Sclerosing Cholangitis

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Introduction

- Primary Sclerosing Cholangitis (PSC) is characterized by inflammation, fibrosis, and stricturing of the intra or extrahepatic biliary tree with periodic saccular dilations.
- Leads to complications of cholestasis and liver failure and increases risk of cholangiocarcinoma. Life expectancy of 10-12 years without liver transplant.
- Up to 90% of patients with PSC also have ulcerative colitis (UC), but less than 10% of patients with UC have PSC.
- Most common in men with a median age of onset 40 years old.
- Common symptoms include pruritus, fatigue, RUQ pain, and febrile episodes.
- Immunologically medicated bile duct injury secondary to autoimmune process, inflammatory reaction, and ischemic damage.

Case

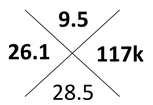
HPI

80yo female with a past medical history of **CLL**, paroxysmal A.fib, and depression presented to the ED with **worsening abdominal pain** over **three days** with **intermittent fevers, chills, weakness, and generalized pruritus**. Laboratory investigations demonstrated **leukocytosis** above CLL baseline with an **obstructive cholestatic pattern on LFTs**.

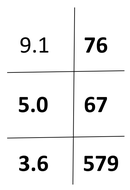
Social Hx: non-smoking, non-drinking, never used illicit drugs
Family Hx: Hypertension, osteoarthritis
Medications: Hx **PKC-b inhibitor MS-553**, Fluoxetine, lorazepam, zolpidem, rosuvastatin, oxycodone, valacyclovir, entecavir

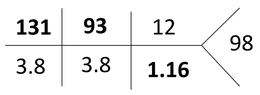
Physical Exam

TMAX 99.5 **HR** 60 **RR** 14 **BP** 159/69 **SpO2** 99%
GENERAL: Thin, **frail**, no acute distress, anxious
RESPIRATORY: CTAB without adventitious sounds
CARDIOVASCULAR: S1,S2 heard, RRR, no MRG, no edema
ABDOMEN: soft, NT, ND, no guarding/rigidity, **no hepatosplenomegaly**
NEUROLOGICAL: A&O x3, no focal neurological deficits, no weakness or numbness, no tremor



ANA < 1:40
p-ANCA < 0.2
C-ANCA < 0.2
IgG 200mg/dL
IgG4 3 mg/dL





Imaging

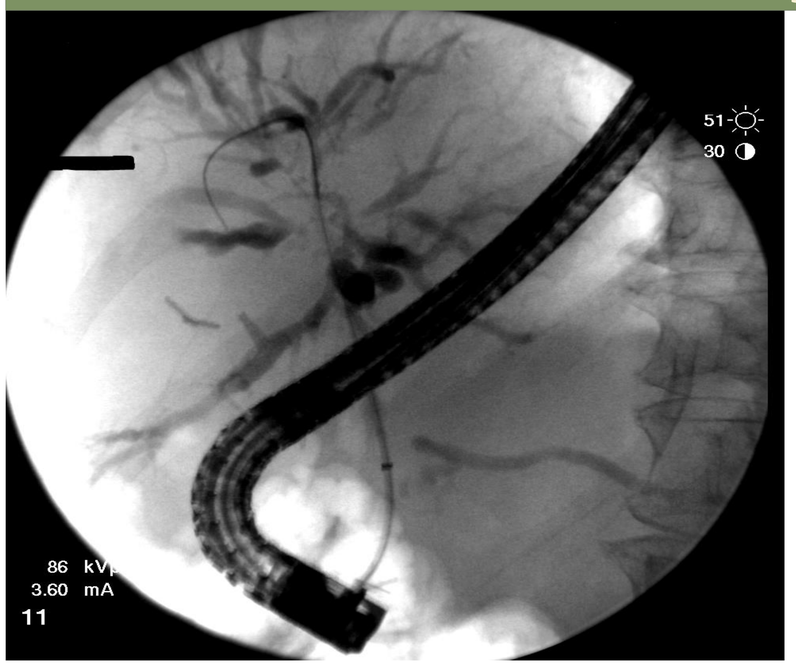


Figure 1: ERCP with contrast cholangiography showing dilation of the right and left intrahepatic biliary branches with stricturing present throughout the intrahepatic bile ducts and complete stricturing of the common bile duct.

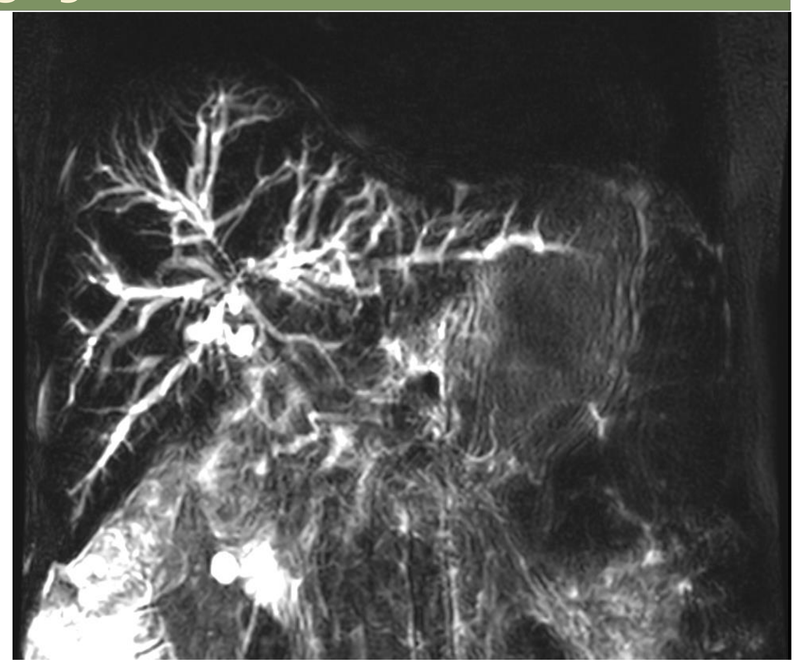


Figure 2: MRCP with contrast demonstrating intermittent dilation and stricturing of intra and extrahepatic bile ducts consistent with PSC.

Discussion

- Overall incidence rate of 0.77 per 100,000 person-years. More common in men with PMH of IBD, autoimmune disease, and other liver pathology.
- Approximately half of the patients with PSC may be asymptomatic despite advanced disease at diagnosis.
- LFTs are typically cholestatic with a primarily elevated ALP. Bilirubin levels may fluctuate with transient blockage of strictured ducts.
- The exact causative antigen that triggers immune response and the mechanism that autoantibodies or abnormal T-Cells lead to disease is unknown.
- Autoimmune markers commonly include:
  - IgG and IgM elevations (50%)
  - Positive anti-SMA and ANA (75%)
  - Elevated P-ANCA (80%)
- Diagnosis is made by cholangiography demonstrating evidence of characteristic ductal changes and by excluding secondary causes.
- A liver biopsy may support the diagnosis of PSC but is rarely diagnostic. In patients with characteristic findings on cholangiography, a liver biopsy is not required.

Conclusions

- This case presents an 80yo female without common risk factors for PSC such as PMH of IBD, liver pathology, or other autoimmune diseases and is negative for autoimmune markers while being relatively asymptomatic despite severe disease found on cholangiography.
- PSC is not a reported side effect of her chemotherapy medications.
- Brush Cytology of CBD was negative for malignant cells.
- Recent literature supports immunologically medicated bile duct injury as primary cause of PSC, however more research is required to determine the exact autoimmune process, antigen, or autoantibody leading to disease
- Development in this patient may be associated with an auto-immune complication of CLL
  - Autoimmune complications found in 10%-25% of patients
  - Most commonly AHA and AITP, Non-hemolytic complications less common
  - Increased concentrations of IL-10, IL-6, IL-4, and other cytokines with an immunomodulatory role have been observed
  - Decrease of TLR2 and TLR4 and increase of TLR9 described in CLL has been shown to contribute to autoimmune disease
  - Auto-antibodies have been shown to be produced by non-malignant and malignant B-Cells in CLL
  - Abnormal function or loss of regulatory T cells has been described
- This case demonstrates the importance of maintaining a broad differential and considering rarer pathologies when common causes of cholestatic picture ruled out

Contact

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