



Occam's Razor Never Dulls

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Introduction

- Epstein Barr Virus (EBV) is a common human herpesvirus with a wide variety of presentations (asymptomatic, infectious mononucleosis) depending on the affected organ (myocarditis, cytopenias).
- However, EBV uncommonly causes hepatitis or rhabdomyolysis.
- The pattern of liver function tests falls into 3 main categories: hepatocellular, cholestatic, and infiltrative.
- Pancreatic adenocarcinoma commonly has an insidious onset and is often missed on imaging.

Case Presentation

Brief History:

57-year-old woman presented with 3 weeks of jaundice, pruritis, dull right upper quadrant abdominal pain, diarrhea, and bilateral leg cramping.

Physical Exam:

Afebrile, HR 70-80, BP 120-150/50-80, sat 95% on room air

- Diffusely jaundiced with scleral icterus
- Distended abdomen, diffuse mild tenderness to palpation with no rebound or guarding
- Mild tenderness to palpation of bilateral thighs

Lab Workup:

- HMGCR Ab: <3
- ANA, Anti-smooth muscle, Anti-mitochondrial: **neg**
- HIV: **negative**
- HAV, HBV, HCV: **negative**
- CMV: **undetected**
- Salicylate, Acetaminophen: **negative**

EBV Serologies:

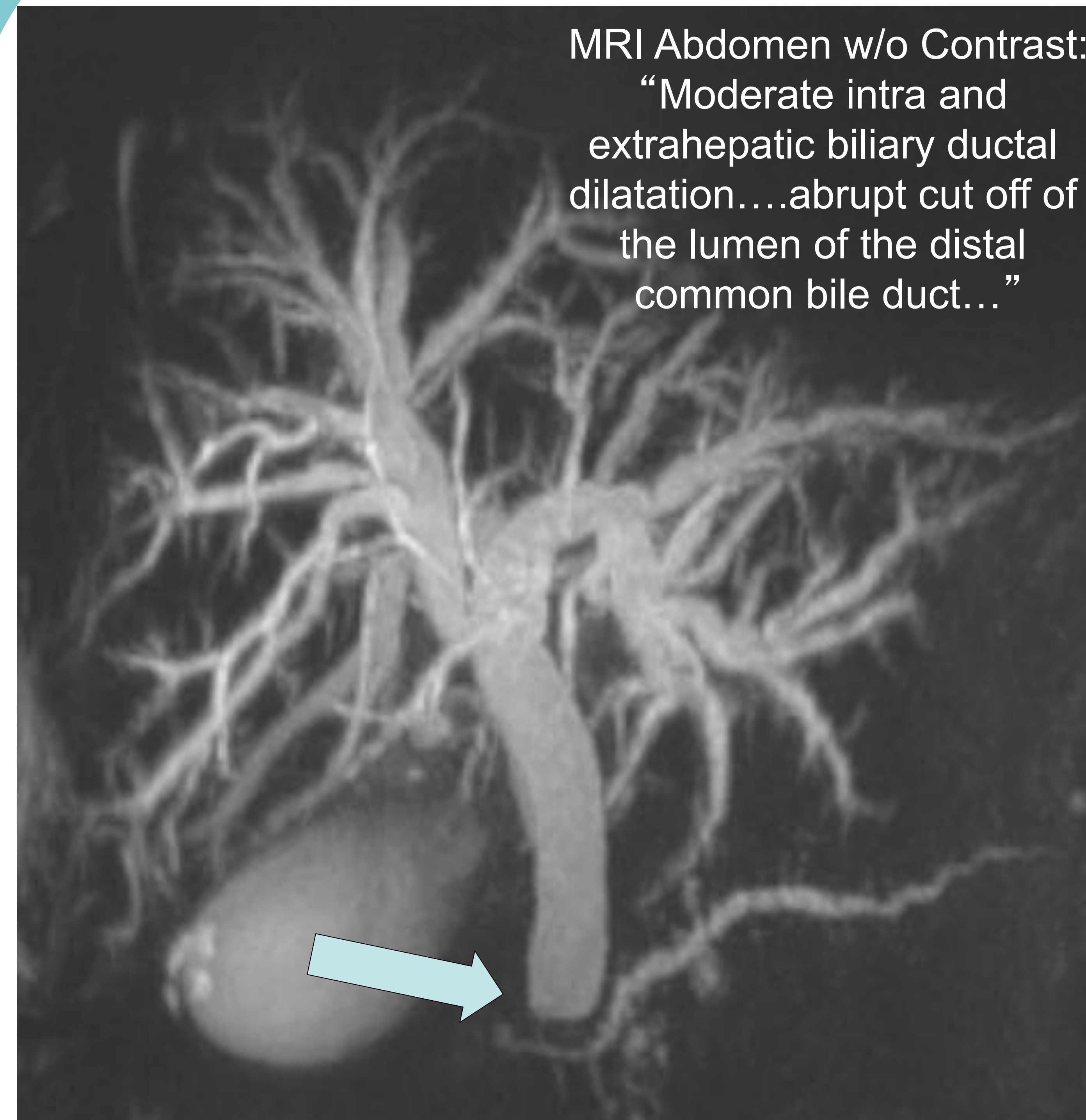
EBV	IU/L	Interpretation
Viral Capsid Ag (VCA) IgG	>750	+
Viral Capsid Ag (VCA) IgM	136	+
Nuclear Ag (EBNA) IgG	>600	+
Early D Ag (EA) IgG	<5	-
Monospot	Negative	
		Recent Infection

Patient was readmitted for persistent abdominal pain and elevated liver tests. EUS showed a pancreatic head mass (12mm x 15mm) confirmed as pancreatic adenocarcinoma.

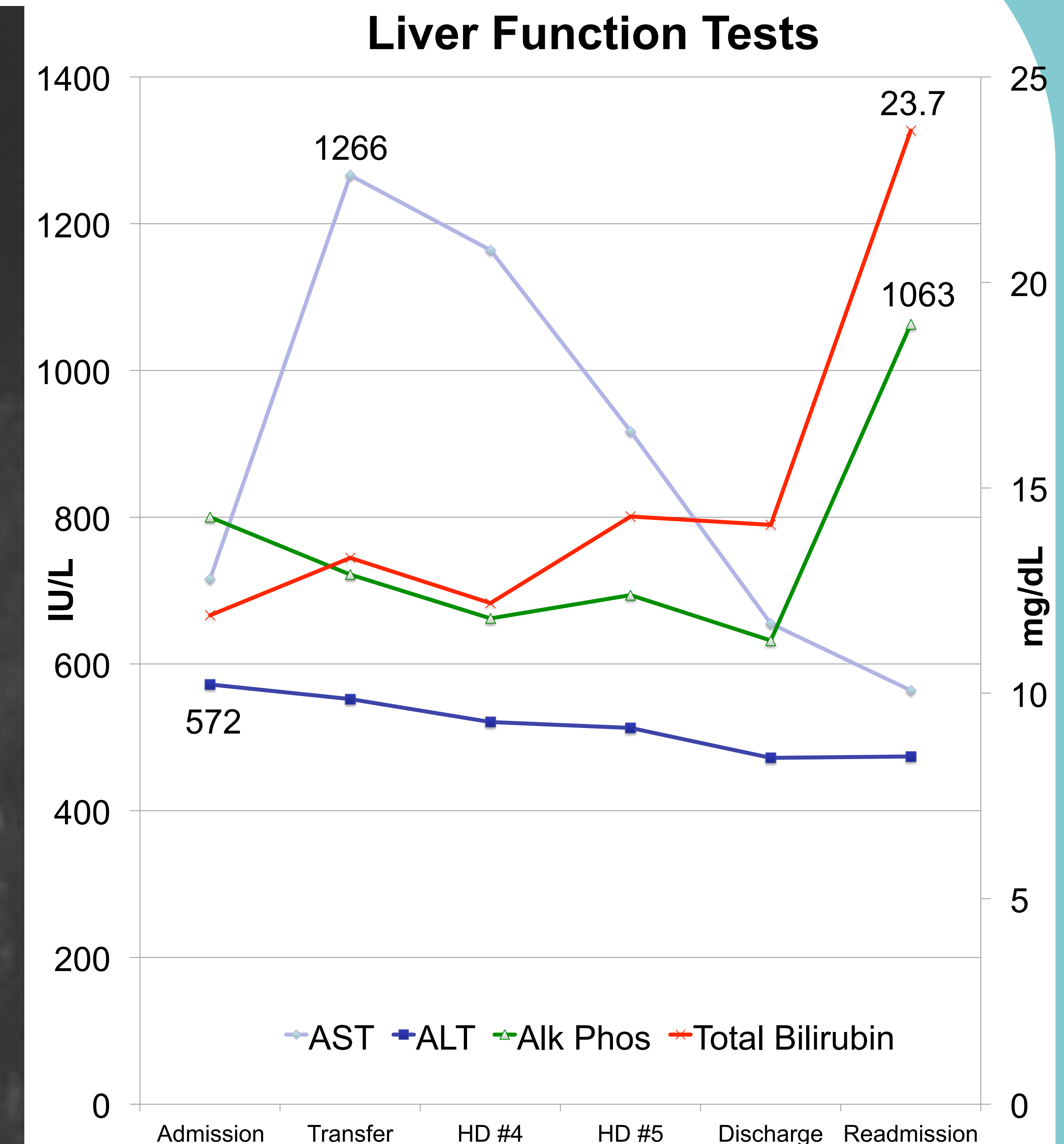
References

- Adamek HE, Albert J, Breer H, Weitz M, Schilling D, Riemann JF. Pancreatic cancer detection with magnetic resonance cholangiopancreatography and endoscopic retrograde cholangiopancreatography: a prospective controlled study. *Lancet*. 2000;355(9225):190-2.
- Karmazovskiy G, Fedorov V, Kubyshkin V, Kotchatkov A. Pancreatic head cancer: accuracy of CT in determination of resectability. *Abdom Imaging*. 2005;30(4):488-500.
- Romagnuolo J, Bardou M, Rahme E, Joseph L, Reinhold C, Barkun AN. Magnetic resonance cholangiopancreatography: a meta-analysis of test performance in suspected biliary disease. *Ann Intern Med*. 2003;139(7):547-57.
- Fernandez-esparrach G, Gines A, Sanchez M, et al. Comparison of endoscopic ultrasonography and magnetic resonance cholangiopancreatography in the diagnosis of pancreaticobiliary diseases: a prospective study. *Am J Gastroenterol*. 2007;102(8):1632-9.

Labs & Imaging



MRI Abdomen w/o Contrast:
“Moderate intra and extrahepatic biliary ductal dilatation...abrupt cut off of the lumen of the distal common bile duct...”



Pattern of Liver Function Tests	Hepatocellular	Cholestatic	Infiltrative
AST/ALT > alkaline phosphatase, bilirubin	+		
alkaline phosphatase, bilirubin > AST/ALT		+	
↑ alkaline phosphatase, normal AST/ALT			+

Discussion

- Primary EBV infection can cause hepatocellular injury; however, it very rarely causes cholestasis, biliary dilation or obstructive jaundice.
- Predominantly elevated alkaline phosphatase and bilirubin suggests cholestasis or biliary obstruction.
- In diagnosing pancreatic adenocarcinoma, the sensitivity of detecting lesions <2cm by CT scan is 79-84%^{1,2}, by MRI is 84-95%^{1,3-4}, and by EUS⁴ approaches 100%.
- In this case, cognitive error (anchoring bias and premature closure) occurred with the influence of Occam's Razor or the principle of finding a unifying diagnosis.

Take Home Points

- EBV is a rare cause of acute hepatitis and rhabdomyolysis.
- More common causes of obstructive jaundice, such as a pancreatic head mass, should be investigated even with negative imaging.
- Diagnosing pancreatic adenocarcinoma often requires high clinical suspicion.
- The principle of Occam's Razor can lead to misdiagnosis