A Curious Case of Cirrhosis Remains Undifferentiated

Hadi Tehfe[1], Rafia Kamran Saboor[1], Babak Rashidi[1,2]
[1] Faculty of Medicine, University of Ottawa, Ottawa, Canada
[2] Department of Medicine, The Ottawa Hospital, Ottawa, Canada

OBJECTIVES

1. Identify the differential for newly-presenting cirrhosis
2. Recognize the features that may help differentiate between hepatic and non-hepatic cirrhosis.

HISTORY AND EXAM

Age: 60 **Sex**: Male **Ethnicity**: Caucasian
Baseline: Independent, exercises regularly, no PMHx

"One month history of swelling and ascites and two week history of exertional dyspnea"

System	Physical Exam Findings
General	Comfortable, A&Ox3
Resp, CVS	**Bilateral crackles, 3/6 pansystolic murmur at the apex, anasarca**
Abdomen	**Distension w/ fluid wave-form and bulging flanks**

Table 1. Initial physical exam on presentation to hospital

INVESTIGATIONS

1st ED Visit - AST 80, ALT 39, ALP 188, GGT 577, Bili 43

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2nd ED Visit - Abdominal US: Moderate ascites and mild nodularity of the liver contour in keeping with cirrhosis
- Peritoneal Fluid: Total cells 240, Neut %21, Protein 29 g/L, Albumin 22 g/L, SAAG 18

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Hepatology Clinic - AMA, ASM, ANA, LKM, ANCA negative
- Hep A/B/C and HIV negative
- Immunoglobulins, Ceruloplasmin, Alpha-1 Antitrypsin normal

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4th and 5th ED Visit - CT Abdo: Ascites, elevated systemic venous pressure, hepatic congestion, and underlying hepatic cirrhosis

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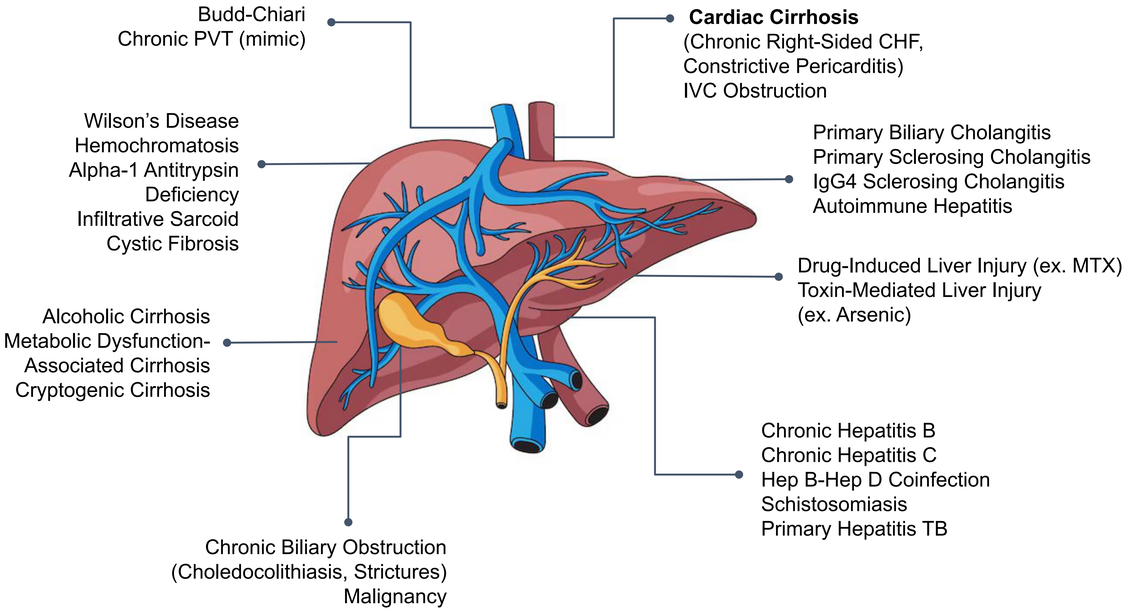
Admission to GIM - BNP 31,045 ng/L
- C-Xray: Cardiomegaly and pulmonary edema
- TTE: Severe left ventricular dysfunction (LVEF 18%) and moderate RV dysfunction

DIFFERENTIAL DIAGNOSIS

Ascites		Serum Ascites Albumin Gradient (SAAG g/L)	
		SAAG > 11	SAAG < 11
Total Ascitic Protein (TAP g/L)	TAP < 25	- Cirrhosis* - Late presenting Budd-Chiari - Acute or Chronic PVTs	- Nephrotic Syndrome
	TAP > 25	- **Right Sided CHF** - Cardiac Tamponade - Constrictive Pericarditis - Early-Presenting Budd-Chiari - IVC Obstruction	- Malignancy (ex. Peritoneal Carcinomatosis) - Infectious (ex. TB) - Peritonitis - Pancreatitis

Table 2. Simplified Differential Diagnosis for Newly Presenting Ascites in Hospital (1)
**For etiologies otherwise not included in the table*

Diagram 1. Expanded Differential Diagnosis for Newly Presenting Cirrhosis in Hospital (2)



DIAGNOSIS AND MANAGEMENT

Cardiac Cirrhosis Secondary to Right-Sided Heart Failure

Additional Focused Investigations

- *Cardiac Catheterization*: No evidence of coronary vessel disease
- *Cardiac MRI:* No acute findings
- Diagnosed by Cardiology as **Idiopathic Non-ischemic Cardiomyopathy,** managed with diuresis acutely and then GDMT

Summary

The diagnosis of HFrEF was missed for approximately 4 months as his initial diagnosis was undifferentiated cirrhosis. Close examination of the SAAG and TAP, as well as an expanded differential should help avoid this, elucidating the often missed diagnosis of cardiac cirrhosis.

CONFLICTS OF INTEREST

Table 3. Evidence of Conflict of Financial Interest

	Co-Author	Conflict Disclosures
1	Hadi Tehfe	N/A
2	Rafia Saboor	N/A
3	Babak Rashidi	N/A

CONTACT INFORMATION

Correspondence: Dr. Hadi Tehfe, **Email:** htehf091@uottawa.ca

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