Cardiac Cirrhosis–An Uncommon Manifestation of Common Disease

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INTRODUCTION

Chronic right sided congestive heart failure may cause chronic liver injury and cirrhosis of liver but is very uncommon. In long term right heart failure there is elevated venous pressure that is transmitted to liver sinusoids via inferior vena cava and hepatic veins. This leads to long term passive congestion and relative ischemia due to poor circulation eventually leading to necrosis and fibrosis of liver predominantly of centrilobular region. Patient generally presents with clinical features of congestive heart failure and portal hypertension but very rarely presents with variceal hemorrhage or encephalopathy[1]. But our case patient presented with evidence of variceal hemorrhage. Also the overall prognosis of cardiac cirrhosis is not well established and treatment of cardiac cirrhosis is mainly aimed at managing underlying heart failure so it becomes important to distinguish it from other cause of cirrhosis[1]

CASE HISTORY

A 50 year male, farmer, chronic smoker presented with progressively increasing abdominal distension for last 6 months, malena for 2 months, Pedal edema for last 6 months and an episode of hematemesis. On repeated enquiry he also revealed of chronic cough and breathlessness with winter exacerbations and pedal edema. Chest X-ray suggested cardiomegaly, ECG suggested low voltage complex with poor R wave progression and 2-D Echo suggested pulmonary hypertension with tricuspid regurgitation with right sided dysfunction suggesting cardiac cause for cirrhosis.

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ciency best heard at the lower left sternal border. The murmur intensifies with inspiration and decreases with expiration.


Nervous system examination reveals no abnormality.

**Investigations**

Hemoglobin- 8.9 gm/dl , Total leucocyte count- 3,600/dl , Differential Leucocyte count- neutrophil- 48%, Lymphocytes- 40%, Eosinophils- 12%. Platelets count- 87,000/dl.

Random Blood sugar-93 gm/dl, Serum Sodium-139 mmol/lits, Serum Potassium- 3.6 mmol/lits, Serum Urea- 27 mg/dl, Serum Creatinine- 0.7 mg/dl

Liver Function Test- S. Bilirubin- 3.1 gm/dl, SALP- 536 IU, SGOT- 96 IU, SGPT- 84 IU, Serum Protien—5.5 gm/dl, Serum Albumin- 2.3 gm /dl

Ascitic Fluids Examination—TLC- 90/ cc, DLC- N30% L70% , Protien- 0.9 gm/dl, SAAG- 1.4

Prothrombin concentration- 71.6%, International Normalised Ratio- 1.46

Viral markers (HbSAg, HCV, HIV)—Negative

Chest X-ray- Cardiac Enlargement with accentuation of bronchovascular marking and prominent central pulmonary vessels.

ECG- Rate of 70/min with irregular rhythm, Low voltage complexes with poor progression of R- waves

ABG- pH-7.38 , pCO2- 63, pO2- 70, SPO2- 84

USG Abdomen- Liver- 12.16 cm, coarse , heterogeneous with irregular capsule, Portal vein-13.9 mm & tortuous, Gross spleenomegaly—22.07 cm., Spleenic vein—13.2 mm ,tortuous & dialated with multiple collaterals in perihilar splenic region.Gross peritoneal collection.

Upper G I Endoscopy- Esophagus shows grade II × III columns of oesophageal varices and during procedure banding was done(Figure 1).

Liver Biopsy- Suggestive of cirrhosis with bands of collagenous connective tissue (Figure 2).

2- D Echo- Severe Tricuspid regurgitation, Severe Pulmonary Arterial Hypertension and Right atrium, dilated right ventricle (Figure 3).

Pulmonary Function Test- FEV1- 52%, FVC- 79%, FEV1/FVC- 0.66 and improvement in FEV1 after use of bronchodilator was 7% suggesting of chronic obstructive airway disease stage II of GOLD criteria.

**In hospital treatment**-
It consisted of Acute Management and Long term management-

**Acute Management**-
Emergent endoscopy was done with banding of oesophageal varices to prevent further bleeding episode. Intravenous fluids administered cautiously to compensate for vascular fluid loss. Intravenous diuretics were given monitoring vitals of patient to relieve patient from symptoms of congestive heart failure. Nebulisation along with oxygen inhalation was given to patient to relieve broncho-constriction and breathlessness.

**Long term management**-
Oral nitrates were advised to prevent further variceal bleeding as b-blockers are avoided in patients with respiratory airway diseases which were advised from other department. Oral diuretics prescribed containing Frusemide and Spironolactone combination. Liver supportive containing...
Our case had Obstructive airway disease of stage II according to GOLD staging evidenced from deranged Pulmonary Function Test, Abnormal Blood Gas analysis. Evidence of Pulmonary hypertension was evident clinically in form of loud P2 and murmur of tricuspid regurgitation which was established on 2D Echocardiography. Chronic congestive heart failure established on long history of 10 years for which he taking treatment from quack of which records were not available.

Presently he presented to us signs and symptoms of portal hypertension and congestive liver injury which was evident from spleenomegaly and progressive ascites which was transudative with SAAG> 1.1. Deranged Liver Function Test with markedly increased SALP. Metabolic and synthetic functions of liver were also compromised evident from decreased serum albumin and deranged PT/INR. Spleenomegaly was associated with hypersplenism as evident from pancytopenia in blood picture. Liver biopsy was done later after patient stabilisation and was suggestive of fibrotic changes establishing cirrhosis.

Usually cases of cardiac cirrhosis not develop variceal bleeding, but our case presented with variceal bleeding evident from history of malena and an episode of hematemesis which was established on upper gastrointestinal endoscopy in which therapeutic banding of varices was done.

Learning-
A patient with Chronic Obstructive Lung Disease developing chronic right sided heart failure due to pulmonary hypertension causes passive congestion on hepatic veins leading to relative ischemia and eventually to hepatic necrosis and fibrosis and raised portal hypertension. Though variceal bleed is uncommon in portal hypertension due to cardiac cirrhosis but may be presenting complain in rare case as seen in our case.

And also we highlight cardiac cause should be thought for differential diagnosis when patient presents with liver cirrhosis.

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CONFLICT OF INTEREST
Declare that there is no conflict of interest that could be perceived as prejudicing the impartiality of the research reported.

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