Intracranial Bleed Can Mimic Hepatic Encephalopathy In Cirrhotic

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Abstract

Introduction- It is well said and proven in literature that important causes of cirrhosis of liver include alcohol intake, metabolic associated fatty liver disease and chronic hepatitis B & C. Less important causes include autoimmune & congenital liver disease, Wilson's and alpha1 antitrypsin deficiency disease. There can occur gradual progression from chronic hepatitis to cirrhosis and in certain cases can further reach stage of hepatocellular carcinoma. Intracranial bleed is uncommon in cirrhotic patients.

Case report- We report a fourty seven-year-old male, a known case of alcoholic related liver disease with decompensated cirrhosis presented with sudden onset altered behaviour and a fall at home. He was thought to be in hepatic encephalopathy but after detailed evaluation was found to be having spontaneous intracranial bleed. He had normal serum ammonia levels, coagulopathy, thrombocytopenia and contrast enhanced computed tomography brain showed left basal ganglia bleed. He was managed conservatively and was discharged under haemodynamically stable condition after five days of indoor admission in ward.

Conclusion- In cirrhosis there is increased bleeding tendencies at various sites, most commonly seen in gastro-intestinal including oral cavity, skin, subcutaneous, urine and stools. Intracranial bleed is not so common and spontaneous one is rare. The first possibility of altered behaviour in cirrhotic background is usually thought to be Porto-systemic encephalopathy (PSE) but intracranial bleed should also be ruled out.

INTRODUCTION- The data pertaining to India regarding various clinical aspects of chronic liver disease (CLD) like aetiology, natural history, clinical presentation, treatment recommendations and its effect of public health, is limited **[1-3].** Moreover, in comparison to developed countries, the burden of morbidity and mortality has not been analysed in depth in developing countries like India **[3-5]** which is essential for determining the status of country's public health system [**6-7**]. The analysis of disease burden in particular geographical area helps in planning cost effective control measures **[7]**. The lack of exact data is detrimental in development of effective policies which can help in taming the menace of such deadly diseases and decrease the need of liver transplant **[7]**. The government bears huge expenditure on CLD patients which can be reduced substantially by investing on preventive strategies for developing chronic liver disease **[8]**. The important causes of cirrhosis of liver worldwide include alcohol intake, metabolic associated fatty liver disease and chronic hepatitis B & C followed by less important causes like autoimmune & congenital liver disease, Wilson's and alpha1 antitrypsin deficiency disease. Patients with cirrhosis face an increased risk of intracranial haemorrhage (ICH), due to factors like coagulopathy, low platelet counts, and potentially accelerated breakdown of existing

clots. While spontaneous ICH is uncommon, the risk is higher with trauma, uncontrolled hypertension, or in patients with hepatopulmonary syndrome. Clinically, it can be challenging to distinguish from hepatic encephalopathy, necessitating careful evaluation and management to restore coagulation and prevent further bleeding.

CASE REPORT - We report a fourty seven-year-old male, a chronic alcoholic for last fifteen years taking alcohol in significant amount developed cirrhosis two years back and decompensated one year back when he developed ascites, pedal edema and upper gastro-intestinal endoscopy showed grade 2 oesophageal varices.

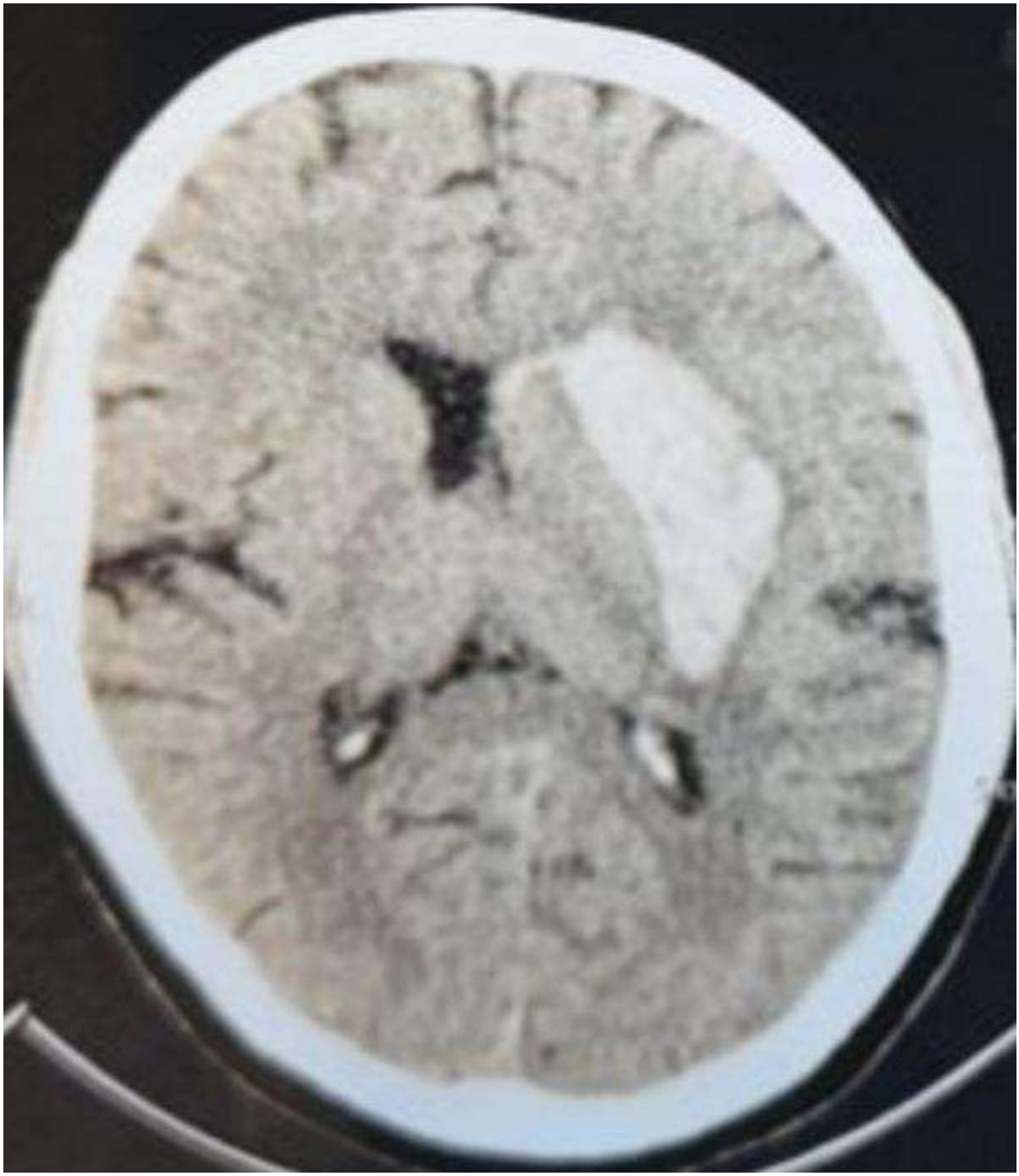

FIGURE 1- CECT Scan Brain Showing Left Basal Ganglia Bleed

He was started on carvedilol, diuretics, multivitamins and other supportive therapy. He was abstinent for three months and presented with sudden onset altered behaviour of one day duration. There was no

history of upper gastro-intestinal bleed, fever, constipation, alcohol or alternative medications intake. In emergency department, at time of admission, he was in altered behaviour, not responding to oral commands. He was thought to be in hepatic encephalopathy and admitted in intensive care unit. On evaluation, he was having pancytopenia (Hb 10 gm%, TLC- 4000, Platelet-90,000/mm^3), deranged liver function tests as evidenced by mild hyperbilirubinemia, raised transaminases with ratio reversal of AST/ALT, low serum albumin, Coagulopathy (INR-1.74) ultrasonogram showed altered echotexture of liver with ascites and splenomegaly, lipid profile was below normal, serum ammonia level, thyroid profile, blood sugar, serum electrolytes, urine complete, chest x-ray, electrocardiogram were normal. In view of normal serum ammonia level and absence of precipitating factors of PSE, contrast enhanced computed tomography brain was done which revealed left basal ganglia bleed. He was managed conservatively with mannitol, decongestive therapy, correction of coagulopathy and other supportive therapy. On third day of admission, he was shifted from ICU to ward and on fifth day was discharged under haemodynamically stable condition.

DISCUSSION- Liver disease is common and associated with clinical and laboratory evidence of coagulopathy. The association between liver disease and intracranial haemorrhage (ICH) remains unclear. In a study, among 1,909,816 patients with a mean follow-up period of 4.1years, the cumulative rate of ICH after a diagnosis of liver disease was 1.70% compared to 0.40% in patients without liver disease ($P < 0.001$). Liver disease remained associated with an increased hazard of ICH after adjustment for demographic characteristics and vascular risk factors **[9]**. Given that patients with cirrhosis often develop major bleeding from the gastrointestinal tract **[10]**, they may also face an increased risk of major bleeding elsewhere, including ICH. Cirrhosis is associated with multiple haematological abnormalities, including of pro-coagulant and anticoagulant factors **[11]**. However, it is uncertain as to whether cirrhosis and, broadly, liver disease predispose to haemorrhage in general, since the gastrointestinal bleeding seen in cirrhosis may be mostly due to portal hypertension rather than an intrinsic coagulopathy [**11,12]**. Therefore, it remains unclear whether liver disease is a risk factor for ICH. These results, along with studies demonstrating low rates of ischemic cerebrovascular disease **[13-16]** and coronary heart disease **[13,17]** in cirrhosis, support the general conclusion that liver disease predisposes to haemorrhage rather than thrombosis. This association may be mediated by decreased levels of most pro-coagulant factors and thrombocytopenia. Alternatively, it is possible that liver disease predisposes to both haemorrhage and thrombosis via a disordered and unstable coagulation system, as some studies have found an association between cirrhotic liver disease and venous thromboembolism **[18-21]**. The finding that the association between liver disease and ICH is somewhat stronger when liver disease is restricted to cirrhotic liver disease, as opposed to all forms and severities of liver disease, raises the possibility of a mechanistic link between severity of liver disease and ICH risk. This relationship requires further investigation. Normally traumatic bleed occurs below fifty thousand counts of platelet and spontaneous below twenty thousand platelets count but, in our case, traumatic bleed occurred at 96,000 platelet count, maybe it was due to coagulopathy with deranged INR of 1.74. The normal serum ammonia level ruled out PSE and hinted at some different aetiology of altered behaviour, thus CECT Scan brain was done which proved it as Intracranial bleed.

CONCLUSION- In cirrhosis there is increased bleeding tendencies at various sites, most commonly seen in gastro-intestinal including oral cavity, skin, subcutaneous, urine and stools. Intracranial bleed is not so common and spontaneous one is rare. The first possibility of altered behaviour in cirrhotic background is usually thought to be Porto-systemic encephalopathy (PSE) but intracranial bleed should also be ruled out.

CONFLICT OF INTEREST- The authors declare that there was no conflict of interest and no financial support taken.

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