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Potential Link between Long-Term Oral Contraceptive Use and the Concurrent Development of Budd-Chiari Syndrome and Peliosis Hepatis

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Abstract **Case Report**

Oral contraceptives are widely used for birth control, but their potential hepatic side effects remain a concern. This article presents a rare case of a 45-year-old woman, mother of four, who developed both Budd-Chiari syndrome and peliosis hepatis, with no other identifiable risk factors, after long-term oral contraceptive use. The case highlights the importance of careful monitoring of patients on prolonged hormonal contraception and the need for increased awareness of its potential hepatotoxic effects.

Keywords: Oral contraceptives, Budd-Chiari syndrome, Peliosis hepatis, Hepatic side effects, Long-term use.

INTRODUCTION

Oral contraceptive pills (OCPs) are one of the most commonly used methods of contraception. Their use has been associated with several liver-related complications, including cholestasis, benign liver tumors, and vascular disorders such as portal vein thrombosis, Budd-Chiari syndrome, and peliosis hepatis [1].

His article reports an exceptional case of the simultaneous occurrence of Budd-Chiari syndrome and peliosis hepatis, where long-term oral contraceptive use appears to be the primary contributing factor.

CASE PRESENTATION

A 45-year-old woman, mother of four, with no history of chronic liver disease or familial thrombosis, presented to a hepatogastroenterology clinic for progressive abdominal distension and discomfort.

Clinical examination revealed the presence of ascites. Laboratory tests showed mild anemia with a hemoglobin level of 10.5 g/dL and a platelet count of 150,000/mm³. The prothrombin time was slightly reduced (67%), but liver function tests were otherwise unremarkable, with no evidence of cholestasis or cytolysis.

A diagnostic paracentesis revealed an ascitic fluid protein concentration of 32 g/L. Abdominal ultrasound showed a heterogeneous liver with irregular contours, suggesting chronic liver disease, and an absence of visible hepatic veins. The portal vein was dilated to 14 mm but remained patent. Splenomegaly was also noted, along with a gallbladder containing multiple stones.

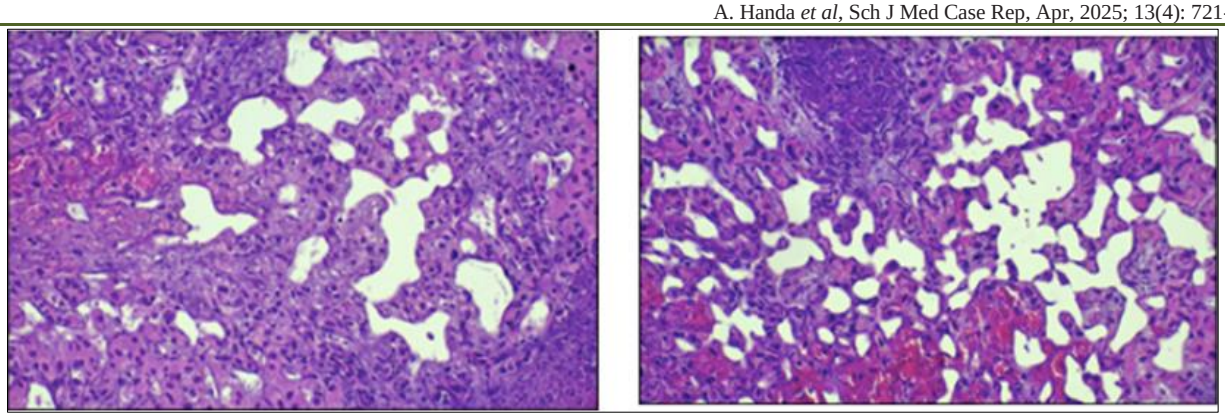
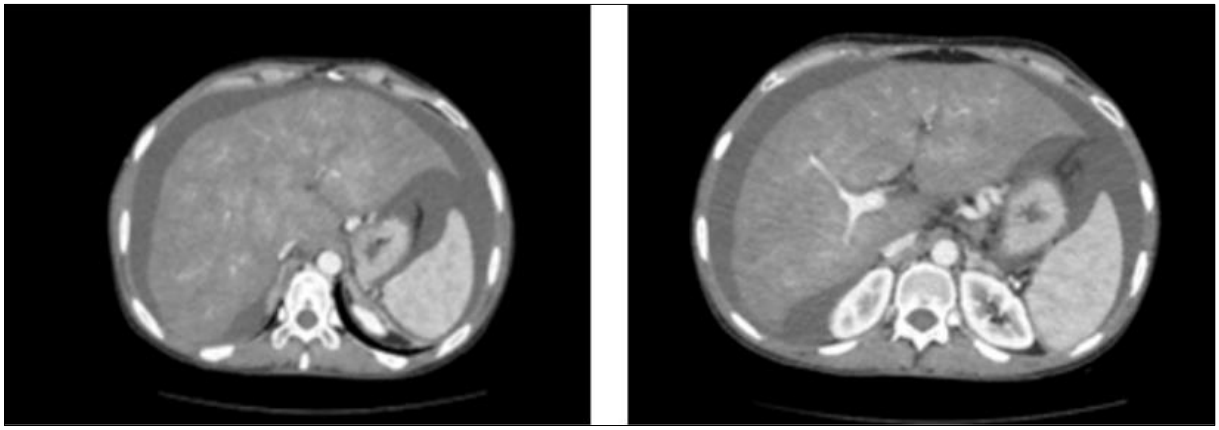


Figure 1 and 2: Extensive sinusoidal dilatation in the liver lobules, bordered by regular epithelial cells and hemorrhagic remodeling compatible with peliosis hepatis.



Figures 3 and 4: Enhancement of the hepatic parenchyma in a mosaic pattern associated with vascular congestion and the presence of sub-centimeter regenerative hepatic nodules, with the absence of visualization of the suprahepatic veins related to Budd-Chiari syndrome.

Contrast-enhanced CT confirmed the diagnosis of Budd-Chiari syndrome. Serological tests for hepatitis B and C were negative. A liver biopsy, performed during a cholecystectomy, revealed chronic hepatitis with significant peliosis hepatis.

A thrombophilia workup ruled out JAK2V617F and factor V Leiden mutations, as well as deficiencies in proteins C and S. Antiphospholipid syndrome and paroxysmal nocturnal hemoglobinuria were also excluded.

DISCUSSION

Budd-Chiari syndrome results from hepatic venous outflow obstruction due to thrombosis or occlusion of the hepatic veins or the inferior vena cava. Myeloproliferative disorders are the most common cause, accounting for 40–50% of cases [2], followed by inherited thrombophilic conditions such as factor V Leiden mutation and protein C or S deficiencies. Acquired conditions, including antiphospholipid syndrome, also play a role [3].

The role of oral contraceptives in Budd-Chiari syndrome remains controversial. A study by Valla *et al*., found that women using oral contraceptives had a 2.37-fold increased risk of developing hepatic vein thrombosis compared to non-users [4]. However, more recent data suggest that oral contraceptives primarily act as a trigger in individuals with underlying thrombophilia. Consequently, even in cases where OCPs appear to be the main thrombotic risk factor, thorough screening for other potential causes remains crucial.

Peliosis hepatis, characterized by blood-filled cystic cavities within the liver, spleen, lymph nodes, or other organs, is a rare disorder. It can be associated with infections (e.g., *Bartonella*, tuberculosis) or medications such as azathioprine, 6-thioguanine, oxaliplatin, and oral contraceptives [5]. While immunosuppressants like azathioprine induce hepatic peliosis by causing sinusoidal endothelial cell damage, the precise mechanism by which OCPs contribute to peliosis remains unclear [6].

Patients may be asymptomatic, with incidental detection on imaging, or may present with severe complications such as intraperitoneal hemorrhage, hepatomegaly, portal hypertension, or liver failure [7]. Histological findings include hemorrhagic parenchymal necrosis and blood-filled cavities, which may regress

after stopping the causative agent but can, in some cases, progress to cirrhosis, as observed in our patient [8].

The uniqueness of this case lies in the fact that oral contraceptive use appears to be the only identifiable factor linking Budd-Chiari syndrome and peliosis hepatis.

CONCLUSION

This case underscores a potential association between long-term oral contraceptive use and the concurrent development of Budd-Chiari syndrome and peliosis hepatis. While oral contraceptives are widely considered safe, their impact on liver health should not be overlooked, particularly in patients at risk for vascular disorders. Regular monitoring and reconsideration of contraceptive options should be encouraged for women presenting with hepatic abnormalities.

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