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RESEARCH ARTICLE

FOCAL ACUTE FATTY LIVER OF PREGNANCY IN THE FALCIFORM LIGAMENT: A CASE REPORT

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Abstract

Acute fatty liver of pregnancy (AFLP) is an uncommon condition, yet serious complication that usually occurs during the third trimester. It is characterized by hepatic microvesicular steatosis and can lead to significant maternal and fetal morbidity and mortality (9). We report the case of a 25-year-old first-time pregnant woman who was admitted with symptoms of vomiting, epigastric pain, and jaundice. Clinical evaluation and laboratory findings confirmed AFLP, with hyperechogenicity near the falciform ligament observed on ultrasound. This case is notable for the focal nature of the steatosis localized to the falciform ligament. Prompt diagnosis and supportive management were crucial in preventing further complications. This case highlights the critical need for early identification and management of AFLP.

Introduction:-

Acute fatty liver of pregnancy (AFLP) is a rare but serious disease, with an estimated incidence ranging from 1 in 7,000 to 1 in 20,000 deliveries (8). It is a potentially life-threatening complication that typically arises in the third trimester or early postpartum period. Although its exact pathogenesis remains unclear, AFLP has been associated with abnormalities in fetal fatty acid metabolism (9).

Case Report:-

A 25-year-old nulliparous woman at 36 weeks of gestation arrived at the emergency maternity department with persistent vomiting, epigastric pain, and generalized jaundice. The patient was conscious and icteric upon clinical examination.

Obstetric ultrasound revealed a single viable fetus with anterior fundal placenta and fetal biometry corresponding to gestational age.

An abdominal ultrasound showed a hyperechogenic area near the falciform ligament, consistent with focal hepatic steatosis.

Laboratory investigations revealed:
1. Hemoglobin: 13 g/dL
2. Platelet count: 229,000/mm³
3. White blood cell count: 18,000/mm³

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4. Aspartate aminotransferase (AST): 370 U/L
5. Alanine aminotransferase (ALT): 815 U/L
6. Total bilirubin: 72 µmol/L
7. Conjugated bilirubin: 60 µmol/L
8. Blood glucose: 0.45 g/L
9. Uric acid: 90 mg/L
10. Renal function: Normal

The patient received supportive care, including glucose correction through intravenous dextrose infusion and administration of antiemetics. Cervical ripening was performed, followed by labor induction, resulting in a vaginal delivery of a female newborn weighing 2550 grams, who showed good adaptation to extrauterine life.

In the postpartum period, the patient was subsequently transferred to the intensive care unit (ICU), where she underwent plasma exchange therapy, leading to a gradual improvement in her liver function tests.

Discussion:-

AFLP is a rare but life-threatening disorder that predominantly occurs in the third trimester (10).The pathophysiology is believed to be linked to a mitochondrial dysfunction in fatty acid oxidation, which leads to hepatocyte microvesicular steatosis (1). Genetic factors, including mutations in the long-chain 3-hydroxyacyl-CoA dehydrogenase gene, have been associated with certain cases (3).

Falciform ligament steatosis (FLS) is a relatively underexplored condition compared to other forms of hepatic steatosis. However, its identification is crucial as it can provide valuable insights into metabolic processes and the pathophysiology of liver diseases. The falciform ligament, which connects the liver to the anterior abdominal wall, typically lacks significant adipose tissue. Nevertheless, several studies have shown that this ligament can become a site of fat accumulation, a condition known as extrahepatic steatosis. This phenomenon is commonly linked to metabolic disorders, including obesity, type 2 diabetes, and cardiovascular diseases (6, 7).

The patient's presentation with vomiting, epigastric pain, and jaundice aligns with common clinical manifestations of AFLP. The laboratory findings, particularly elevated liver enzymes, hyperbilirubinemia, hypoglycemia, and leukocytosis, are consistent with AFLP diagnostic criteria, such as the Swansea criteria (2).

The presence of a hyperechogenic area near the falciform ligament on ultrasound is indicative of focal hepatic steatosis. This finding is particularly unusual, as AFLP typically presents with diffuse hepatic involvement. Focal steatosis in the falciform ligament area suggests a localized pattern, which could be related to differential vascular supply or localized metabolic dysfunction (4).

Management primarily involves prompt delivery to prevent maternal and fetal deterioration. Supportive care, including glucose management and monitoring for coagulopathy, is essential (5). In this case, the patient's stable renal function and absence of coagulopathy allowed for close monitoring and timely delivery.

Conclusion:-

AFLP is a rare but serious condition that requires timely diagnosis and intervention. This case highlights the importance of recognizing the clinical and laboratory signs of AFLP and utilizing imaging modalities for diagnosis. The focal nature of hepatic steatosis in the falciform ligament is an unusual presentation that adds complexity to the diagnosis. Early delivery and supportive care are key to improving maternal and fetal outcomes.

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