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Focal acute Fatty Liver of Pregnancy in the falciform ligament: A Case Report

ABSTRACT:

Acute fatty liver of pregnancy (AFLP) is a rare but severe complication that typically manifests in the third trimester. It is characterized by hepatic microvesicular steatosis and can lead to significant maternal and fetal morbidity and mortality. We present the case of a 25-year-old primigravida who presented with 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 underscores the importance of early recognition and management of AFLP.

INTRODUCTION:

Acute fatty liver of pregnancy (AFLP) is a rare rare disease. Incidence has been evaluated between one per 7000 and one per 20,000 deliveries (8). Potentially fatal complication that occurs in the third trimester or early postpartum period. Although the exact pathogenesis is unknown, this disease has been linked to an abnormality in fetal fatty acid metabolism.(9)

KEYWORDS: Acute fatty liver, pregnancy, abdominal ultrasound

CASE REPORT:

A 25-year-old primigravida at 36 weeks of gestation presented to the emergency maternity department with complaints of 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 the following:

- Hemoglobin: 13 g/dL
- Platelet count: 229,000/mm³
- White blood cell count: 18,000/mm³
- Aspartate aminotransferase (AST): 370 U/L
- Alanine aminotransferase (ALT): 815 U/L
- Total bilirubin: 72 μmol/L
- Conjugated bilirubin: 60 μmol/L
- Blood glucose: 0.45 g/L
- Uric acid: 90 mg/L

- 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 transferred to the intensive care unit, 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. The pathophysiology is believed to be linked to a mitochondrial dysfunction in fatty acid oxidation, which leads to hepatocyte microvesicular steatosis (1). Genetic factors, such as mutations in the long-chain 3-hydroxyacyl-CoA dehydrogenase (LCHAD) gene, have been implicated in some 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 often associated with metabolic disorders such as 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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