Scientific Research Publishing

Open Journal of Obstetrics and Gynecology, 2022, 12, 1176-1182
https://www.scirp.org/journal/ojog
ISSN Online: 2160-8806
ISSN Print: 2160-8792

Case Report-Early Detection of Acute Fatty Liver of Pregnancy in Urgent Care Department with Nonspecific Symptoms

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How to cite this paper: Jangalgi, R., Faheem, S. and Irfan, S. (2022) Case Report-Early Detection of Acute Fatty Liver of Pregnancy in Urgent Care Department with Nonspecific Symptoms. *Open Journal of Obstetrics and Gynecology*, **12**, 1176-1182.
https://doi.org/10.4236/ojog.2022.1211102

Received: October 15, 2022
Accepted: November 12, 2022
Published: November 15, 2022

Abstract

Acute fatty liver of pregnancy is a rare but serious disorder affecting pregnancy. The rarity of this situation along with nonspecific symptoms makes it difficult to diagnose and thus causes catastrophic events. Biochemical parameters are required to diagnose this condition and differentiate it from other life threatening causes of pregnancy like HELLP syndrome and Preeclampsia. To avoid complications it is imperative to diagnose this condition at the earliest by doing blood test investigation and symptomatic management and delivery. We present a case in our hospital which came to urgent care with nonspecific symptoms and was diagnosed on blood tests and managed promptly and thus averted a catastrophic event.

Keywords

Acute Fatty Liver of Pregnancy (AFLP), Pregnancy, Liver Disorder

1. Introduction

Acute fatty live of pregnancy is a rare but serious condition affecting pregnancy. Acute Fatty Liver of Pregnancy (AFLP) is a rare, catastrophic disease affecting women in the third trimester of pregnancy or in the post-partum period. It is usually a diagnosis of exclusion and requires a strong index of suspicion for a timely diagnosis and prompt intervention [1].

Acute fatty liver of pregnancy resulting in hepatic failure is a medical and obstetrics emergency. Incidence varies from 1:7000 to 1:15,000 pregnancies [2]. It is more strongly linked with a fetal homozygous mutation for the long chain 3-hydroxyacyl-CoA dehodragenace, (LCHAD). This leads to accumulation of fatty acid metabolites in the placenta which are then shunted into maternal circula-

tion and accumulates in maternalliver [3]. The mother is typically heterozygous for this mutation and also has reduced fatty acid oxidation. However, women who are negative for the mutation can also develop AFLP. Having multiple pregnancies and male fetus are also risk factors [3]. The early presenting symptoms of Acute fatty liver of pregnancy are nonspecific like malaise, nausea, vomiting, fever and abdominal pain and could be missed easily thus increasing maternal and fetal morbidity and mortality. The presentation of AFLP is nonspecific, requiring a high index of suspicion [4].

AFLP is a diagnosis of exclusion and differential diagnosis includes preeclampsia, HELLP syndrome, intrahepatic cholestasis of pregnancy, acute viral hepatitis and biliary obstruction [5]. It needs a strong index of suspicion for early detection and timely diagnosis and prompt management [1]. The objective of this case report is to know about this rare condition and how to diagnose it by blood investigations. Urgent care staff along with obstetricians should be trained about AFLP and to diagnose it at the earliest.

2. Case Report

Gravida 2 Para 0, 32 years with Type 2 Diabetes was having regular natal care in our maternity hospital. Her antepartum period was uneventful with good sugar control on insulin Levemir atnight. She was diagnosed as Type 2 Dm since 1 year.

She was posted for induction of labor at 38 weeks of pregnancy as she was type 2 DM. She came to urgent care department at 36 weeks 6 days of pregnancy with complaints of fatigue and vomiting since 3 days, no itching. Her main concern was she was feeling fatigued after vomiting, with one episode of vomiting every day in the morning.

The findings of General practitioner were as follows-looks tired, sclerae yellowish tinge, Urine protein nil, BP 101/64, random blood sugar was 57 mg/dl. Uterus was soft with no tenderness, no uterine contractions noted and unfavorable cervical findings. Cardiotocography was reactive and she felt good fetal movements.

Doctor advised blood investigations as she perceived that patient was looking very tired and not her usual self (patient was working in our hospital as urgent care nursing staff) and ordered liver function test and complete blood count (**Table 1**).

Her viral hepatitis screen was negative. Electrolytes were normal. Serum Amylase and Lipase were normal. Her viral hepatitis screen was negative.

After reviewing the investigations general practitioner alerted the primary physician and the woman was admitted under close observation and opinion of internal medicine was taken, there was high suspicion of acute fatty Liver of pregnancy with differential diagnosis of viral hepatitis, obstetric cholestasis, preeclampsia and HELLP syndrome.

Ultrasound of abdomen was done and it showed mild diffuse fatty infiltrates of the liver parenchyma (**Figure 1**) and thickening of the wall of the gallbladder

Table 1. Blood investigations.

Investigation		
Blood Inv.	**Recorded Level**	**Normal Level**
Hemoglobin	15.6 g/dl	11.6 - 15 g/dl
CRP	11.1 g/dl	0 - 5 g/dl
WBC	17.70 10^3/ul	3.4.9.6 10^3/ul
Platelet Count	117 10^3/ul	157 - 371 10^3/ul
Bile Acids	99 umol/Litre	1 - 6 umol/Litre
ASI	299 U/Litre	5 - 34 U/Litre
ALT	478 U/Litre	0 - 55 U/Litre
Bilirubin Direct	97.9 umol/Litre	0 - 8.64 umol/Litre
Bilirubin Total	128.9 umol/Litre	3.4 - 20.5 umol/Litre
Alkaline Phosphate	537 u/l	40 - 150 u/l
Albumin	2.9 g/dl	3.5 - 5.2 g/dl
Uric Acid	6.4 mg/dl	2.5 - 6.2 mg/dl
Creatinine	1.70 mg/dl	0.55 - 1.02 mg/dl
Lactate Dehydrogenase	572 IU/L	135 - 225 IU/L
Coagulation Profile PT	20.20 Seconds	9.7 - 12.9 Seconds
INR	1.85	0.8 - 1.2
APTT	40.60	27.1 - 38.5 Seconds
Fibrinogen	133 mg/dl	207 - 467 mg/dl

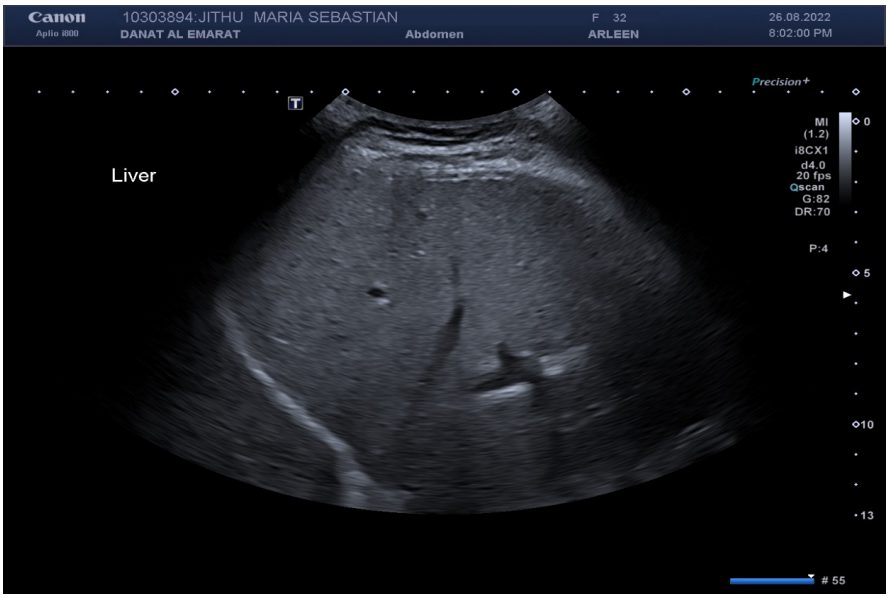

Figure 1. Images of upper abdominal ultrasound with visualization of liver and showing mild diffuse fatty infiltrates of the liver parenchyma.

with multiple intraluminal gallstones measuring about 0.4 - 0.5 cm each and no ascites (shown in Figures 2-5).

She was transferred to a Tertiary care centre for further management as she had renal derangement and coagulopathy. Patient and her husband were briefed about the situation and explained that delivery needs to be expedited. In tertiary care centre, she was taken for emergency lower segment cesarean section under general anesthesia. Baby boy was delivered by vertex with Apgar score of 7 at 1 minute and score of 8 at 5 minutes. Placenta was calcified and there was thick meconium stained liqor. Blood loss was around 1 litre. Patient developed

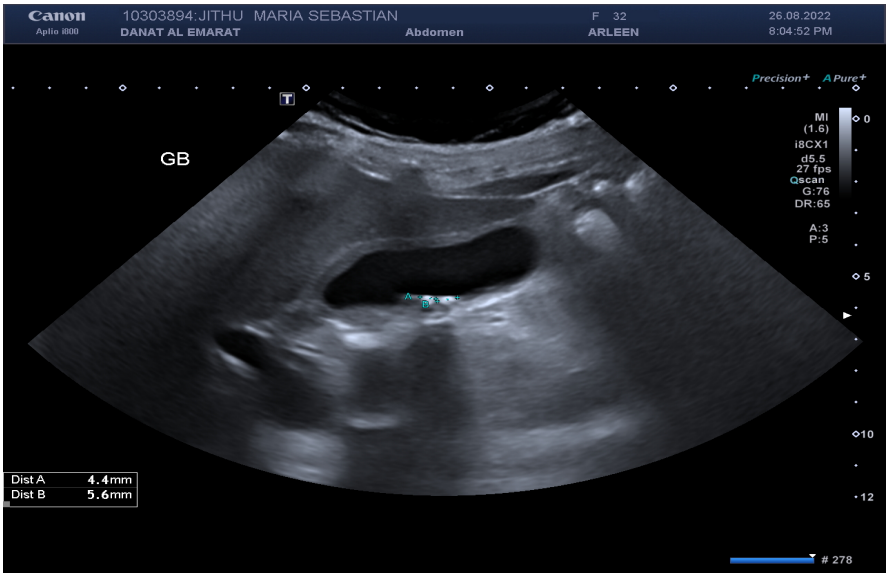

Figure 2. Images of ultrasound of gall bladder.

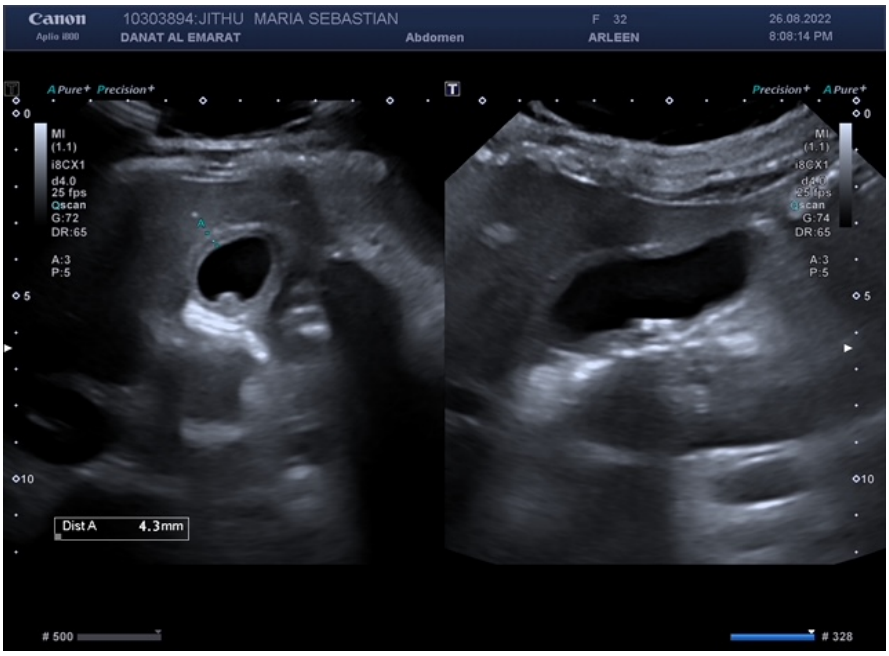

Figure 3. Images of gall bladder calculus.

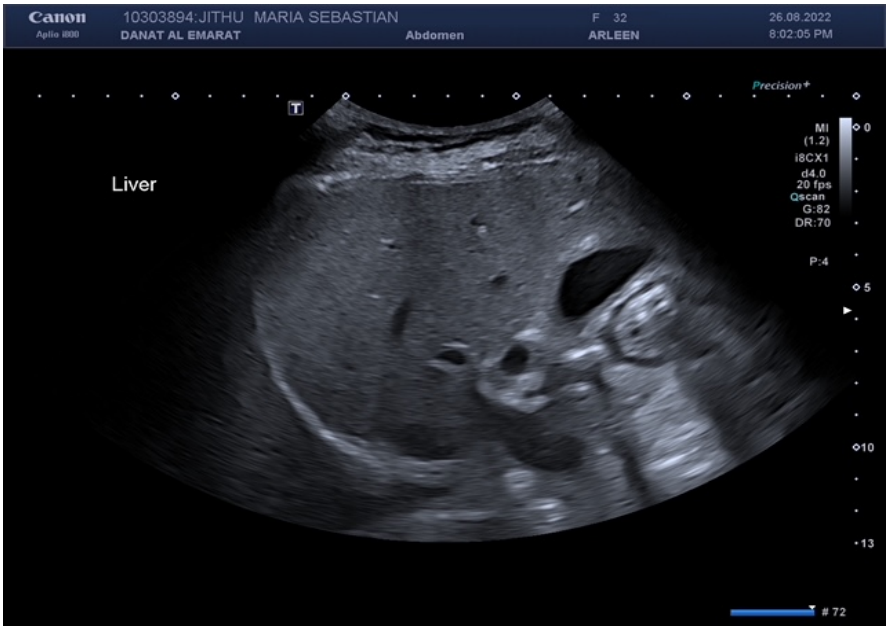

Figure 4. Images of liver and gall bladder.

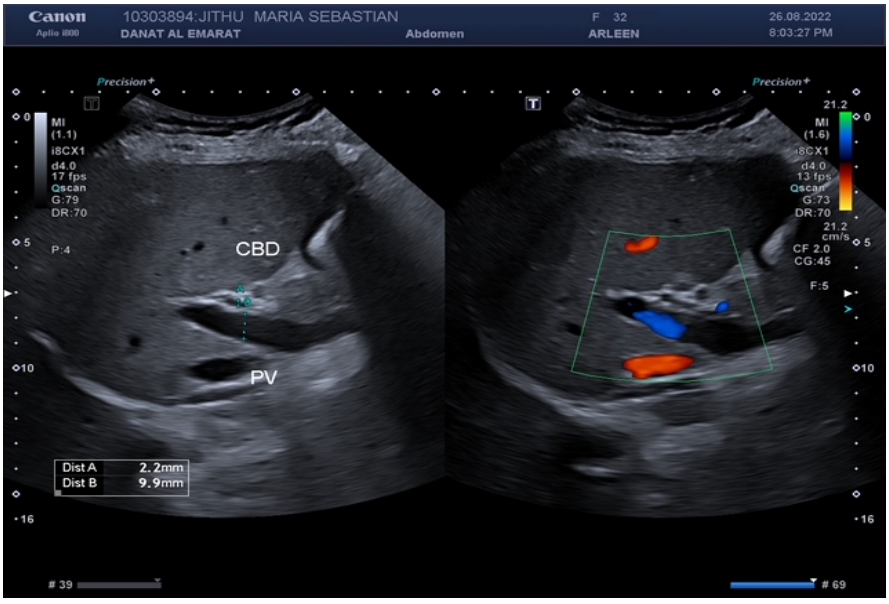

Figure 5. Images of common bile duct.

Atonic postpartum hemorrhage and was managed by medical methods and 2 units of packed red cells were given to her. She received 2 units of packed cells 2 units of fresh frozen plasma. Creatinine was 154 micromol/L on first postoperative day and then reduced to 147 micromol/L on second postoperative day with downward trend and on 4th postoperative day it was 83 micromol/L. Normal level of creatine is 44 - 80 micromol/L. She had renal involvement due to acute fatty liver of pregnancy but it was reversible with prompt management of AFLP. She received symptomatic treatment at hospital with close observation, IV antibiotics and fluid management.

Postoperatively patient recovered well and was in hospital for 5 days and liver enzymes decreased significantly. After 2 weeks from discharge, the blood test were repeated again and were as follows: Hemoglobin was 12.70 g/dl, Bile acids was 12 umol/L, AST became 60 U/L and ALT 47 U/L, Bilirubin direct was 60.7 umol/l and serum creatinine at 0.62 mg/dl.

Patient had a good recovery with near normalization of biochemical parameters in 2 weeks.

3. Discussion

AFLP is common in last trimester of pregnancy and puerperium and is characterized by abnormal liver enzymes, coagulopathy and acute renal injury. Biochemical tests often reveal high AST, ALT, bilirubin levels, raised serum urea and creatinine and raised serum uric acid and Hypoglycemia. Hematological tests can demonstate leukocytosis, low to normal platelet count and anemia. Coagulopathy or DIC occur in approximately 70% of cases [6].

It is difficult to distinguish AFLP from HELLP syndrome as they have similar clinical and laboratory features [7] and around 50% of women with AFLP have concomitant preeclampsia and in both disorders prompt delivery of fetus is required. Other differential diagnosis includes HUS, Thrombotic thrombocytopenia TTP, paracetamol toxicity, exacerbation of SLE and preeclampsia.

Delivery is the curative treatment as liver failure will continue until the fetus has been delivered. Before delivery mother should be stabilized with correction of hypoglycemia, coagulopathy and hypertension [8]. Maternal intensive supportive care with multidisciplinary approach needs to be done. Elevated lactate with hepatic encephalopathy appeared to be best predictors of maternal death or need of liver transplantation in one retrospective study.

LFT begin to fall within 1 - 2 days of delivery and complete normalization of LFT is expected in majority of women if early treatment is done [7].

4. Conclusion

AFLP is rare but can be catastrophic in pregnancy and delay in diagnosis is associated with high mortality [9] and so this case highlights the importance of high index of suspicion of this condition in women presenting with nonspecific symptoms. Along with obstetricians the family physician and general practitioner working in urgent care should be aware of this hepatic disease.

Patient Consent

We have obtained the consent of the patient for publication of this case.

Conflicts of Interest

The authors declare no conflicts of interest.

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