Hepatic Infarction Associated Antiphospholipid Syndrome and HELLP in Pregnancy

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INTRODUCTION

- Pregnant patients with antiphospholipid syndrome (APLS) are at risk for thromboembolic complications.
- Hepatic infarction can lead to hepatic rupture, fulminant liver failure and death.
- We present a case of a pregnant patient with history of APLS who presented with HELLP and a liver infarction despite treatment with anticoagulation.

INITIAL PRESENTATION

Chief Complaint: 36-year-old female with past medical history of pulmonary embolism, prothrombin gene mutation and APLS presented 32 weeks pregnant with RUQ pain radiating to back and left shoulder. Associated with nausea and decreased oral intake.

Home Medications: Lovenox, aspirin, Lexapro, Ativan

Initial Exam: Afebrile and BP 110/50s

- Soft abdomen, mildly tender in RUQ. Fetal status was normal.

Pertinent Laboratory Data:

- Elevated AST/ALT, normal INR, low platelet count
- Elevated LDH, indirect bilirubin & low haptoglobin, no schistocytes on smear
- Mild anemia, normal fibrinogen

OSH Hospital course:

- Due to concern for HELLP she underwent C section
- Post delivery labs worsened, admitted to ICU
- Abdominal CT showed large hypodensity in segment 3 concerning for large hepatic infarct
- Treated with plasmapheresis and IV steroids for APLS

HOSPITAL COURSE

- Due to worsening hepatic enzymes, tachycardia and fever the patient was transferred to tertiary care center ICU.
- On exam post transfer, patient complained of RUQ pain and tenderness.
- Followed by OB-GYN, hematology, and hepatology for multidisciplinary care during hospitalization
- MRI abdomen obtained as seen in Figure 1.
- Treated with anticoagulation for APLS and pro-thrombotic state.
- Eventually, hepatic enzymes down trended and platelet count improved over hospital course.
- Post discharge, the patient was treated with warfarin for anticoagulation and labs completely normalized on long term follow up.

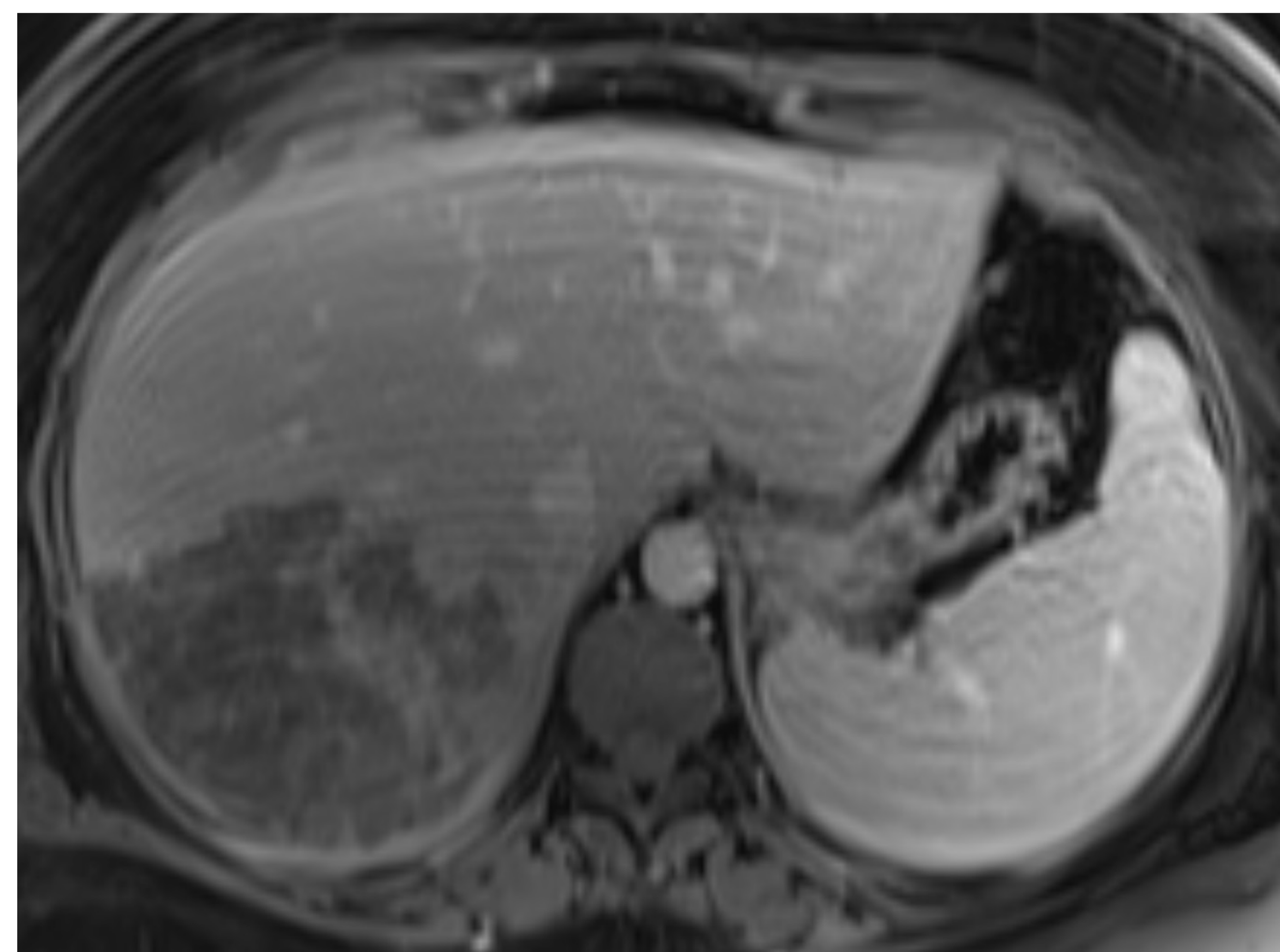

FIGURE 1. Large infarct involving entire segment 6 and 7, part of 5 and 8. Hepatic and portal veins appear normal.

LAB DATA

Lab	Value
HCV Ab	Non-reactive
Hep B surface Ab, Ag, and Hep B core Ab	Non- reactive
Hep A IgM	Non-reactive
Hep E IgM, IgG	Negative
Hepatitis Delta antigen & Ab	Negative
HSV IgG	Negative
EBV Ab panel	Acute ifxn negative
CMV IgM	Negative
6 month follow up	22

Day	AST	ALT	Total bilirubin	Direct bilirubin	Platelets
Day of admission	255	274	0.6	---	116
Post C-section	616	734	0.8	---	101
POD #1	1652	1702	0.7	---	43
POD # 2	2073	2114	1.9	0.8	4
POD # 3	577	975	1.2	0.6	51
POD # 10	59	86	0.7	0.5	245
6 month follow up	22	25	0.6	0.2	164

DISCUSSION

- Preeclampsia and HELLP syndrome occur more often in APLS patients than general population.
- Due to dual blood supply of the liver, hepatic infarction is a rare complication of APLS.
- APLS patients with triple positivity/high titers of antibodies have higher risk for poor pregnancy outcomes and vascular thrombosis than those without.
- Consider hepatic infarction in patients with APLS and HELLP who present with abdominal pain and elevated liver enzymes.
- Prior case report of a similar pregnant patient with massive hepatic infarction secondary to HELLP syndrome resulted in acute liver failure.
- Patients can develop thrombotic complications despite therapy with anticoagulation.

REFERENCES

1. El Allani L, Benlamkaddem S, Berdai MA, Harandou M. A case of massive hepatic infarction in severe preeclampsia as part of the HELLP syndrome. Pan Afr Med J. 2020 Jun 9;36:78
2. Kim JH, Yee C, Kuk JY, Choi SJ, Oh SY, Roh CR, Kim JH. Hepatic infarction in a pregnant woman with antiphospholipid syndrome and triple antibody positivity: A case report focusing on catastrophic antiphospholipid syndrome. Obstet Gynecol Sci. 2016 Sep;59(5):397-402.
3. Mor F, Beigel Y, Inbal A, Goren M, Wysenbeek AJ. Hepatic infarction in a patient with the lupus anticoagulant. Arthritis Rheum. 1989 Apr;32(4):491-5.
4. Tufano A, Coppola A, Maruotti GM, Martinelli P, Cerbone AM, Di Minno G. HELLP syndrome and its relation with the antiphospholipid syndrome. *Blood Transfus*. 2014;12(1):114-118.
5. Yoshihara M, Mayama M, Ukai M, Tano S, Kishigami Y, Oguchi H. Fulminant liver failure resulting from massive hepatic infarction associated with hemolysis, elevated liver enzymes, and low platelets syndrome. J Obstet Gynaecol Res. 2016 Oct;42(10):1375-1378.
6. Westbrook RH, Dusheiko G, Williamson C. Pregnancy and liver disease. J Hepatol. 2016 Apr;64(4):933-45. doi: 10.1016/j.jhep.2015.11.030. Epub 2015 Nov 30. PMID: 26658682.