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MEGALOBLASTIC PANCYTOPENIA MIMICKING HELLP SYNDROME IN LATE PREGNANCY: A CASE REPORT

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ABSTRACT

Introduction: Hemolysis, Elevated liver enzyme, low platelet (HELLP) syndrome is often noted as a complication of preeclampsia but can occur without this association as well. Severe form often requires termination of pregnancy. Vitamin B12 deficiency is common in vegetarian population and can mimic HELLP syndrome.

Case Summary: We present an interesting case which was initially thought to be HELLP syndrome based on the clinical presentation and patient was planned for induction of labour, but later on it was found out to be a case of Vitamin B12 deficiency on the basis of Lab findings. Patient responded well to the B12 supplementation and unjustified termination of pregnancy was avoided.

Conclusion: This case illustrates an interesting clinical misdiagnosis of HELLP syndrome in an overt megaloblastic anemia. An elaborated workup with clinical suspicion should be made for megaloblastic anemia in such condition.

Keywords: HELLP syndrome, Megaloblastic Anemia, Vitamin B12 deficiency, Pregnancy

Introduction

HELLP syndrome is a form of microangiopathy characterized by hemolytic anemia, elevated liver enzymes and low platelet counts. Majority of HELLP syndrome occurs with pre-eclampsia. Fulminant form often requires premature delivery or termination of pregnancy (1). Vitamin B12 deficiency is common in vegetarian population and can lead to pancytopenia along with elevated liver enzymes. Pregnancy complicated with vitamin B 12 deficiency can mimic HELLP. We present an interesting diagnostic dilemma where patient is clinically suspected to be HELLP syndrome but a final diagnosis of severe B 12 deficiency was made.

Case summary:

A 24 years old second gravida vegetarian female with one live healthy issue, resident of sub Himalayan region, presented at 31 weeks of gestation with fatigue, dizziness, decreased appetite and generalized weakness leading to difficulty in standing properly for 1 week. The patient had an unremarkable past history. Her antenatal course was unsupervised with no ultrasonography or clinical follow up. Her previous

pregnancy was uneventful with normal vaginal delivery.

Clinical examination revealed marked pallor and yellow discoloration of sclera. Her vitals were stable except tachycardia (heart rate 118/min, good volume). Systemic examination was unremarkable with no organomegaly or lymphadenopathy. Obstetric assessment revealed uterus size corresponding to 31 weeks of gestation with appreciable fetal heart sound.

Her initial laboratory evaluation showed marked anemia with high mean corpuscular volume (MCV) and low platelet count, Lactose dehydrogenase (LDH) was high and liver function test (LFT) were deranged (Table 1). She was suspected to have HELLP syndrome based on her reports and initial assessment. As her general condition was poor, prompt induced delivery was planned and dexamethasone was given for fetal maturation.

Hematology laboratory raised a flag for high MCV and blood picture was reviewed. Macro-ovalocytes were seen with hyper segmented neutrophils with no schistocytes on peripheral smear. (fig 1). Revisiting her dietary history revealed strict vegetarian diet. She was then suspected to have megaloblastic anemia and serum Vitamin B12 levels was found out to be 50 pg/ml (normal reference range 181-914 pg/ml). She was started on B12 supplementation. Iron was added after 5 days. A sequential improvement was noted on her blood parameters. A normal vaginal delivery was done on follow up.

Table 1: Baseline laboratory parameters

Parameters	Values
Haemoglobin (gm/dl)	5.29
Total leukocyte count	3.12
Differential counts	N37L52E00 M11B00
Platelets	11000
Mean corpuscular volume	118.60
MCHC	38.67
MCH	45.85
RDW	22.32
Serum LDH	1694
Creatinine	0.6
SGOT/PT	43/92
S. Bilirubin [Total/Direct]	6.37[1.17/5.2]
Albumin	2.37

DISCUSSION:

Weinstein in 1982 first defined HELLP as a separate entity from preeclampsia. HELLP syndrome is a combination of Hemolysis (H), Elevated Liver enzymes (EL) and Low Platelets (LP). It is a serious condition in its complete form and is associated with substantial risk for both mother and fetus.(2).The syndrome is considered as a variant of pre-eclampsia but can occur on it's own (3).Index case presented with the above-mentioned features which raised the suspicion of HELLP syndrome. Rapid induction was planned to deliver the baby as HELLP subsides after that. However laboratory alarm of high MCV guided further investigations towards a comparatively milder condition of megaloblastic anemia.

Pregnancy is compensated state and is associated with a steady and physiologic fall in serum vitamin B12. Strict vegetarian diet is another independent risk for its deficiency. Vitamin B12 deficiency among pregnant women, who took vegetarian diet due to religious and socio-economic reasons, has been noted in literature (4).

In our case the patient was a vegetarian and this put her at risk of B12 deficiency. Probably this on-going deficiency status was compounded with physiological fall in B12 level and manifested clinically. B12 deficiency can manifest as pancytopenia with mild hemolysis, sensory neural impairment in form of loss of vibration sense in limb (Sub-acute combined degeneration of spine). Index case presented in a sick

condition with severe anemia, low platelet and hemolysis, prompting clinician to suspect HELLP syndrome. However low leukocyte count is unusual in HEELP unless disseminated intravascular coagulopathy (DIC) ensue (5).

HELLP syndrome and megaloblastic anemia can have similar presentation as depicted in our case, but have entirely different lines of management, so correct diagnosis becomes of utmost importance.

Conclusion:

This case illustrates an interesting clinical misdiagnosis of HELLP syndrome in an overt megaloblastic anemia. An elaborated laboratory workup with clinical suspicion should be made for megaloblastic anemia in such condition.

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