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

Siddharth Sharma1, Kunal Das2, Mansi Kala3, Sushil Kumar Shukla4, Ruchira Nautiyal5, Anuradha Kusum6

1Junior Resident, Department of Pathology, Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Dehradun, Uttarakhand (India)
2Assistant Professor, Department of Paediatrics, Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Dehradun, Uttarakhand (India)
3Assistant Professor, Department of Pathology, Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Dehradun, Uttarakhand (India)
4Senior Resident, Department of Pathology, Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Dehradun, Uttarakhand (India)
5Professor, Department of Obstetrics and Gynaecology, Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Dehradun, Uttarakhand (India)
6Professor, Department of Pathology, Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Dehradun, Uttarakhand (India)

Article Info: Received 20 May 2019; Accepted 27 June. 2019
DOI: https://doi.org/10.32553/ijmbs.v3i6.375
Address for Correspondence: Dr. Mansi Kala, Assistant Professor, Department of Pathology, Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Doiwala, Dehradun, Uttarakhand, India
Conflict of interest: No conflict of interest.

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 lead to pancytopenia along with elevated liver enzymes. Pregnancy complicated with vitamin B12 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 B12 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.

| 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.

**References:**

1. Chauvet E, Youssef M, Boukhari R, El Guindi W, Carles G. Pseudo-HELLP syndrome par careenceenvitamine B12: à propos de sept cas. Journal de GynécologieObstétrique et Biologie de la Reproduction. 2009 ;38(3):226-30.
2. Haram K, Svendsen E, Abildgaard U. The HELLP syndrome: clinical issues and management. A Review. BMC pregnancy and childbirth. 2009 ;9(1):8.
3. Sharma RM, Sandhu GS. HELLP Syndrome: Report of Two Cases. Medical Journal Armed Forces India. 2006 ;62(4):373-4.
4. Idris N, Arsyad AH. Vitamin B12 deficiency presenting as pancytopenia in pregnancy: a case report. Malaysian family physician: the official journal of the Academy of Family Physicians of Malaysia. 2012;7(2-3):46.
5. Roessler FC, Wolff S. Rapid healing of a patient with dramatic subacute combined degeneration of spinal cord: a case report. BMC research notes. 2017 ;10(1):18.