

A Case Report on Iron Deficiency Anemia Due to Abnormal Heavy Menstrual Bleeding

Ayesha Mushtaq, Natasha Hussain, Sidra Nazir, Rizwan Khalid

Abstract— Objective-- To describe a case of severe iron deficiency anemia due to abnormal heavy menstrual bleeding.

Clinical Presentation and Intervention-- A twenty-two 12 months old lady used to be visited tertiary care medical institution with myasthenia, fatigue and shortness of breath on gesture. She stated a history of heavy menstrual bleeding. Her hemoglobin was 6.1 gm%, serum ferritin was 2.1 gm% and whole iron binding potential was once 38.8 mcg/dl. Provisional analysis of chronic blood loss and iron deficiency anemia was made and the patient used to be treated with iron and different multivitamin supplements.

Conclusion--Physicians have been clinically recognized the condition as iron deficiency anemia based on the laboratory investigations. The cause for iron deficiency had been ordinary heavy menstrual bleeding, similarly evaluations are indispensable to rule out the authentic etiology at the back of abnormal heavy menstrual bleeding.

Keywords-- Iron deficiency anemia, hemoglobin, serum ferritin, myasthenia, etiology

1 Introduction

Anaemia is a public fitness hassle that influences populations in each wealthy and bad country. Although the primary purpose is iron deficiency, it seldom exists in isolation. More frequently it coexists with a wide variety of different causes, such as malaria, parasitic infection, nutritional deficiencies, and haemoglobinopathies.(McLean, E, et al.,2008)

The World Health Organization defines anaemia as a haemoglobin two (Hb) concentration beneath 13 g/dl in guys over 15 years of age, below 12 g/dl in non-pregnant girls over 15 years of age, and below 11 g/dl in pregnant women. The regular vary for Hb also varies between distinct populations in the UK. Therefore it is real looking to use the decrease restrict of the normal vary for the laboratory performing the test to define anaemia. Malabsorption, terrible dietary intake, blood donation, gastrectomy and use of non-steroidal anti-inflammatory drugs (NSAIDs) are common motives of IDA, and there are many different possible causes.(Goddard, A. F, et al.,2011)

Anemia is characterized by way of the deficiency of the quality and extent of hemoglobin, a molecule discovered in the crimson blood cells. Hemoglobin is vital as it consists of oxygen from the lungs to the tissues in the human body. When the hemoglobin is unable to raise oxygen to the body's tissues, the body develops anemia. An man or woman who has anemia may also journey signs such as incessant fatigue, insomnia, dizziness, faded skin, shortness of breath, a loss of normal menstrual cycle and an strangely fast heartbeat.(N., Soundarya. (2015).

There are various sorts and classifications of anaemia. The occurrence of anaemia is due to the a variety of two red cell defects such as manufacturing defect (aplastic two anaemia), maturation defect (megaloblastic anaemia), two

defects in haemoglobin synthesis two (iron deficiency anaemia), genetic defects of two haemoglobin maturation (thalassaemia) two or due to the synthesis of two abnormal hemoglobin (haemoglobinopathies, sickle phone anemia and thalassemia) and physical loss of purple cells (hemolytic anemia). This is a condition in which the body lacks the quantity of crimson blood cells to hold up with the body's demand for oxygen. Understanding the specific classifications can help to apprehend the signs and also to avoid anemia in the first place.(Mukherjee and Ghosh., 2012)

The pathophysiological modifications in IDA are classified into three stages. The first stage includes pre-latent deficiency the place liver, spleen and bone marrow exhibit reduced iron stores; 2d stage shows latent deficiency which is the situation with very low or absent bone marrow iron stores and there is a modern discount in plasma iron (bone marrow iron is absent, serum ferritin is <12µg/l, transferrin saturation is <16% and free erythrocyte porphyrin is increased) however, hemoglobin concentration remains normal; and finally IDA is a very late stage of iron deficiency with revolutionary fall in hemoglobin tiers and mean corpuscular volume.(Revoori&Kiranmai., 2015)

Blockage of systemic or cell iron homeostasis may additionally result in both iron overload and iron deficiency blood disorders. In addition, blood loss, hemolysis, erythropoietin, or hypoxemia can additionally stimulate erythropoiesis. Clinically, in case of iron-deficiency anemia, storage iron declines until iron shipping to the bone marrow is inadequate for erythropoiesis. This is commonly monitored with medical indicators, commencing with low plasma ferritin, observed via reduced plasma iron and transferrin saturation and culminating with low-

hemoglobin content material in pink blood cells. (Handelman and Levin., 2008)

Anaemia is nevertheless a principal killer in obstetrics. India contributes to 80% maternal death due to anaemia in South East Asia. In India it reasons 20% maternal dying without delay and 20% circuitously from cardiac failure, haemorrhage, contamination and pre eclampsia. Although moderate anaemia is now not related with unfavorable pregnancy outcome, severe maternal anaemia includes vast chance of haemorrhage and infection. Relative chance of maternal mortality with moderate anaemia was once 1.35 and extreme anaemia used to be 3.51. It is also associated with preterm, low start weight babies, small for gestational age, low apgar rankings and excessive perinatal mortality.(V. Sridevi, S. Viswanathan, and L. Kumari., 2015)

2 Case Report

A 22 years' old woman was visited-out patient medicine ward at tertiary care hospital with the chief complaint of myasthenia, shortness of breath (SOB) and fatigue. On history, she reported an abnormal heavy menstrual bleeding. There was once no proof of gastrointestinal bleeding and was otherwise healthy. Fifteen days formerly to her visit to tertiary care health facility the patient visited the predominant care clinic with comparable complaints and was especially diagnosed the circumstance as anemia, no therapy used to be began without delay and the health practitioner recommended the affected person to undergo laboratory test to take a look at including, HB levels, erythrocyte sedimentation rate (ESR), liver characteristic take a look at (LFT's), diet B12, serum ferritin, serum creatinine and outcomes have been given in table 1. After evaluating reports physician prescribed iron dietary supplements alongside with other vitamins. On reporting in the tertiary care clinic with the chronic signs the patient had gone through more than a few laboratory investigations on suggestion of the physician and physician identified the circumstance as iron deficiency anaemia.

Table 1: clinical laboratory investigation reports

Parameters (Units)	Reported Values	Normal Range
Hemoglobin(gm)	6.1	12 – 15
Total white blood cell count (mil/mm3)	6500	4000-11000
Means corpuscular volume(fl)	51.2	83-101
Meanscorpuscularhemoglobin(pg)	13.9	27-32
Platelet count(lakh/mm3)	2.4	1.5-4.5

Packed cell volume(vol %)	19	40-50
SerumvitaminB12(pg/ml)	204	180-900
Serumferritin(ng/ml)	2.1	20-400
Totalironbindingcapacity (mcg/dl)	38.8	250-400
Erythrocytesedimentationrate (mm/hr)	11	<15
SerumIron(mcg/dl)	12	53-167
Serumfolicacid(ng/ml)	15	4-15
Peripheral blood smear (ng/ml)		RBC- anisocytosis present with Microcytic hypochromicnormoctes

3 Discussion

This is a case of extreme IDA observed in a young girl which we generally take a look at in pregnant female because of capacity of fetus to extract its iron necessities from mother and iron deficiency is the most common condition takes place in 80% of pregnant women.

A study used to be carried out which revealed that HMB can two reason a limit in iron level and hemoglobin quantity and lead to anemia in ladies if not treated. Anemia was once determined to be current in two 0.33 of women who had HMB. The presence of HMB and the relationship between hemoglobin and serum ferritin in women had been investigated in accordance to the two parameters of the hemoglobin amount and serum ferritin level used for the detection of anemia. The medianhemoglobin amount and ferritin stages of female who had been determined to have HMB had been appreciably decrease than these besides heavy bleeding.(V.Sridevi, S. Viswanathan, andLavanyaKumari., 2015)

Here in this case the affected person have a look at the signs of myasthenia, fatigue and SOB is due to reduced oxygen carrying capacity. The reviews of hemoglobin concentration, packed cell volume, mean corpuscular volume and means corpuscular hemoglobin exhibits the evidence for red blood cell disease anemia the place as the added evidences like depleted stages of serum iron, serum ferritin and complete binding capability and laboratory investigations. The motive for iron deficiency used to be heavy menstrual bleeding; similarly reviews are quintessential to rule out why bizarre heavy menstrual bleeding occurs. Pelvic ultrasonography and complete family records are recommended for conclusive answer to apprehend the particular causes for atypical heavy menstrual bleeding which leads to IDA.

4 Conclusion

Physicians have been clinically recognized the condition as iron deficiency anemia based on the laboratory investigations. The cause for iron deficiency had been ordinary heavy menstrual bleeding; similarly evaluations are indispensable to rule out the authentic etiology at the back of abnormal heavy menstrual bleeding.

5 References

1. Kocaoz, Semra&Cirpan, Rabiye&Degirmencioglu, Arife. (2019). The prevalence and impacts heavy menstrual bleeding on anemia, fatigue and quality of life in women of reproductive age. Pakistan Journal of Medical Sciences. 35. 10.12669/pjms.35.2.644
2. McLean, E., Cogswell, M., Egli, I., Wojdyla, D., & de Benoist, B. (2008). Worldwide prevalence of anaemia, WHO Vitamin and Mineral Nutrition Information System, 1993–2005. Public Health Nutrition, 12(04), 444. doi:10.1017/s1368980008002401
3. Goddard, A. F., James, M. W., McIntyre, A. S., & Scott, B. B. (2011). Guidelines for the management of iron deficiency anaemia. *Gut*, 60(10), 1309–1316. doi: 10.1136/gut.2010.228874
4. N., Soundarya. (2015). A review on anaemia – types, causes, symptoms and their treatments..Mukherjee, K.L., Ghosh, S., 2012. Medical laboratory Technology. Procedure Manual for Routine Diagnostic Tests. Vol I (Second edition), 263-266
5. Revoori, Sujan&Kiranmai, Mandava. (2015). A CASE REPORT ON IRON DEFICIENCY ANEMIA OF UNKNOWN CAUSE. Annals of Drug discovery and Biomedical Research. 2. 254-258.
6. Handelman GJ and Levin NW. Iron and anemia in human biology: a review of mechanisms. Heart Fail Rev 2008; 13: 393-404.
7. Mukherjee, K.L., Ghosh, S., 2012. Medical laboratory Technology. Procedure Manual for Routine Diagnostic Tests. Vol I (Second edition), 263-266.
8. V. Sridevi, S. Viswanathan, LavanyaKumari. "Prevalence and Associated Risk Factors of Anaemia in Pregnancy in a Tertiary Care Rural Hospital". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 64, August 10; Page: 11209-11214, DOI: 10.14260/jemds/2015/1614

IJSER