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Henna Induced Methemoglobinemia

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Abstract: **Methemoglobinemia is a disorder that affects the hemoglobin and leads to impermeant in oxygen delivery to tissues. Methemoglobinemia can be inherited or acquired with many known causes, we report a 55 years old male patient presented with shortness of breath and fatiguability after ingestion boiled Henna [Lawsonia Inermis], which induced methemoglobinemia and was treated with ascorbic acid.**

Keywords: **Methemoglobinemia, Henna, Lawsonia, hemolytic, anemia.**

I. INTRODUCTION

Methemoglobinemia is a disorder that lead to oxidation of hemoglobin and causing a state of functional anemia.[1] Methemoglobin can be caused with wide known medications and toxins.[2] clinical suspicion should be raised as it has a wide range of symptoms.[3] We presented a 55 year old male patient came complaining of shortness of breath and fatiguability after ingestion boiled Henna [Lawsonia Inermis].

II. CASE REPORT

55 years old male Yemeni patient came to emergency department complaining from easy fatiguability and shortness of breath in the last 4 days. Patient condition started 4 days back when he started to feel that he is easy to get fatigued with his daily activity, this condition started gradually improved with rest and aggregated by excretion. Associated with shortness of breath, non-productive coughs and fever. There was no night sweating, weight loss and loss of appetite. There was headache, one episode of vomiting and abdominal pain which started one day prior admission. He had no sore throats, change bowel habits, decrease in level of consciousness, dizziness, chest pain, palpitations, dysuria and lower limbs pain, He is known case of diabetes mellitus and hypertension not compliance to any medication. Four days back patient took herbal drink [boiled Henna] as he thought that it will help for his diabetes. There is no family history of chronic diseases or same complaints. There is no travel history or contact with sick person, he is married and work as driver. In physical examination patient is conscious and oriented not distressed. Vital signs are as follows: Temperature 37.9C, pulse rate 94 bpm, respiratory rate 26 bpm, blood pressure 141/74mmHg and O2 saturation is 68% on room air and 82% on high flow O2. There was no cyanosis or palpable lymph nodes, Other physical finding was unremarkable. Laboratory result were as follows Ph:7.44, pO2 287mmHg, pCO2:40.5mmHg, HCO3:28.0 mmol/L, wbc 25.37 $X10^3$/uL, HGB 11.5 g/dL, MCV 80fL, MCH 27.7pg, PLT 332$X10^9$/L, LDI 2371U/L, Coomb's test positive, Ferritin >1650ug/L, iron level 40.9 umol/L, transferrin saturation 84% and reticulocyte index 3.8%. chest X-ray were normal, ECG showing normal sinus rhythm, CT angiography not reveal any structural abnormalities within the organs of the chest and demonstrated no occlusion or thrombosis in pulmonary vessels. After rolling out other causes of desaturating Methemoglobinemia were suspected, Methemoglobin level send and came 6.3%. Patient were admitted to ICU as a case of Methaemoglobinaemia, hemolytic anemia, diabetes and hypertension. Patient started on ascorbic acid [vitamin C] and given 1 unit of PRBCs as his hemoglobin dropped to 6.9 g/dL. Patient symptoms improved within a week his methemoglobin level and other laboratory return to normal, patient education provided, and he is been discharged home.

III. DISCUSSION

Methemoglobinemia is an oxidation of hemoglobin which leads to the formation of methemoglobin, a compound which contains the same amount of oxygen as oxyhemoglobin, but no longer is capable of release the oxygen in the tissues causing a state of functional anemia.[1] patients will be presented with wide range of symptoms starting to be

asymptomatic, dyspnea, nausea, lethargy, stupor, or deteriorating consciousness, depending on the percentage of methemoglobin which is normally being less than 2%, higher percentage been with more sever presentation.[3] Methemoglobin level can be raised from a variety of causes which can be from genetic, idiopathic, and toxicologic sources[2], as in our case boiled Henna which is scientifically called Lawsonia Inermis, it is widely used as a hair dye and skin tattoos especially in Arabic and Hindu cultures.[4] Many reported cases of acute hemolytic anemia after applying Henna dye mainly in pediatric age group and specially in G6PD patients,[5] but there is one case reported in Korea with the same presentation as methemoglobinemia after using a Henna dye on hair and patient presented with shortness of breath and cyanosis.[6] Management of methemoglobinemia starting from removing of the offending agent, severe symptomatic cases may need to be in intensive care unit and ventilatory support and inotropes.[7] Blood transfusions specially in anemic patient may be helpful and will as exchange transfusion and hyperbaric oxygen.[8] specific therapy urgently indicated in patients with toxin ingestion, the two most often used are methylene blue and ascorbic acid.[9]

IV. CONCLUSION

Methemoglobinemia had a broad spectrum of presentations starting from feeling dizzy and up to coma, depending on the percentage of methemoglobin present.[3] Causes can be divided to genetic, idiopathic, and toxicologic sources.[2] Henna [Lawsonia Inermis] is used in hair dye hair dye and skin tattoos especially in Arabic and Hindu cultures.[4] Ingestion of Henna is not usual but it can be a cause of Methemoglobinemia as in our case.[6] management of methemoglobinemia starting from removing of the offending agent and methylene blue and ascorbic acid can be used.[7], [9]

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