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Anemia due to marching-March Hemoglobinuria

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I. Introduction

Marchhemoglobinuria is a form of hemolytic anemia due to mechanically induced damaged to red blood cells, which result in hemoglobinuria. Repetitive impacts to the body may cause mechanical trauma (hemolysis) of red blood cells. It a rare abnormal condition characterized by presence of hemoglobin in the urine, occurs after strenuous physical exertion on prolonged exercise, such as marching or distance running.

II. Case Report

We describe here a 24 year old male who presented with complain of generalized weakness, pain B/L lower limb and reddish brown discoloration of his urine after a religious march bare footed of about 180km which continued for 4 days on physical examination pallor present and his urine examination revealedblood in urine and blood picture showed Hb-6.2, MCV-113.6, RBC-1.34, reticulocyte count-3.5%, LDH-410, ESR-110, Sr. bilirubin-2.7, uribilinogen-1.5, haptoglobin 0.2 and direct coombs test was negative. The urine sample was negative for myoglobulinand other causes of hemolysis and hematuria was excluded and after 3 days there was resolution of his symptoms and investigation showed normal urine study.

III. Discussion

The first clue to the pathogenesis of hemoglobinuria and anemia in individuals participating in long marches was provided in 1861 by an army physician who studied a young German soldier who had complained of passing dark urine following strenuous field marches.

He found that the urine contained hemoglobin and that the condition clearly differed from the well-described paroxysmal hemoglobinuria due to cold. During the next 80 years, many additional cases of hemoglobinuria following long-distance running were reported, but it was not until 1964 that Davidson provided a logical explanation.

He noticed that two track runners who complained of dark urine after games had a particularly forceful stamping gait, and he proposed that red cells were destroyed in the soles of the feet during running. After some ingenious preparatory studies the runners were encouraged to change their stride and especially to wear soft linings in their shoes, and the hemoglobinuria disappeared.

IV. Conclusion

The association of mechanical trauma induced hemoglobinuria is being recognized. We however feel prevalence of such activities causes trauma to red blood cell causing hemolysis resulting in release of free hemoglobin from lysed cells which filtered into the urine. We hope to raise the awareness of trauma induced hemolysis in evaluation of patient with hemoglobinuria.