

Coomb's Positive Hemolytic Anemia Due To Insect Bite

Biswas S, Chandrashekar P, Varghese M

Abstract

Hemolytic anemia has occasionally been described in association with insect bites. The venom of certain spiders, bees and wasps, and some snakes can rarely cause intravascular hemolysis. We report here a case of Coombs positive hemolytic anemia due to an insect bite. These bites often pose diagnostic challenges and when associated with systemic manifestations necessitate early intervention. This communication reviews the clinico-hematologic spectrum in these cases and also emphasizes the need to capture the insect as identification would help in early diagnosis and management.

Submitted: 25 February 2007

Reviewed: 25 February 2007

Accepted: 4 September 2007

From the Department of Hematology & Blood bank, Sultan Qaboos Hospital, Salalah, Sultanate of Oman.

Address Correspondence and reprint request to: Dr. Sabita Biswas, Department of Hematology & Blood bank, Sultan Qaboos Hospital, Salalah, Sultanate of Oman.

Email: sabita.biswas@rediffmail.com

Case Report

Anineteen year old Omani male was bitten on the left shoulder by an insect while moving wood in a garage. Since the initial pain was tolerable and subsided within an hour, no immediate medical attention was sought. After about 8-10 hours the pain gradually increased (at site of the bite) and he developed fever with itching for which he reported to the casualty of the Sultan Qaboos Hospital. Local examination revealed an indurated tender cutaneous wound with central discoloration. The patient complained of itching all over the body and was febrile (38.5°C). Systemic examination was insignificant.

Blood examination revealed hemoglobin of 9.8 µg/dL, white blood cell count (WBC) of $19 \times 10^9/L$ ($19 \times 10^3/\mu l$), (Neutrophils 88%, lymphocytes 10%, myelocyte 2%), and platelet count of $402 \times 10^9/L$. The blood film showed red cell anisopoikilocytosis with polychromatophils and neutrophilic leucocytosis with toxic granules. The patient was kept under observation. The coagulation profile: prothrombin time, active partial thromboplastin time and fibrin degradation product (PT, aPTT and FDP) and biochemistry investigations were essentially within normal limits. The hemogram was repeated on day 3 of admission and the hemoglobin had dropped to 7.6 µg/dL, with a further increase in leucocyte count ($23 \times 10^9/L$). The platelet count was stable. Blood film showed anisopoikilocytosis with spherocytes. The direct anti globulin test (using polyspecific antiglobulin reagent - anti IgG and C3 d Coombs test) was done and was positive. The patient was hospitalized for management of hemolysis and treatment of the necrotic wound. He also received antibiotics and steroids for five days. Subsequently he stabilized and hemoglobin was 10.2 µg/dL when discharged after 10 days.

Discussion

Insect bites are uncommon causes of hemolytic anemia.

Envenomation by bees, wasps, certain spiders and snakes can rarely cause intra-vascular hemolysis. The manifestations may be mild, self limited or fulminant and life threatening. Usually a history of insect bite is forthcoming, but cases with severe systemic disturbances in absence of any cutaneous lesion have also been described.¹ This article highlights the spectrum of clinico-hematologic manifestations in such cases.

The present case developed symptoms 8-10 hours after being bitten and systemic manifestations were limited to intra-vascular hemolysis. There was neutrophilic leucocytosis with a left shift and the direct anti globulin test was positive. In earlier reports of spider bite cases spherocytes, hemoglobinuria, erythrophagocytosis and a leuco erythroblastic picture have been described.² Rarely rhabdomyolysis, hyperkalemia requiring hemodialysis and disseminated intravascular coagulation (DIC) may also occur. In the United States, the Brown recluse spider and Black widow spider are particularly dangerous.³ In many instances the spider has not been specifically identified, but clinical and epidemiologic data are strongly implicative. This is particularly true for the Brown recluse spider which inhabits South America and the central and southern United States.³ Hemolytic reactions to bee stings appear to be rare. Rare cases resulting in oliguric renal failure and DIC are known.⁴ Cobra bites are known to cause coagulopathy and hemolytic anemia but are rare.

In the present case a history of insect bite was forthcoming but the type of insect could not be definitely ascertained. Also the systemic manifestations were limited to hemolysis. Serious disturbances though rare can be potentially fatal and hence the need for familiarity with the clinical and hematological spectrum. In some cases anti-venom has proved beneficial but it is not always available.⁵ Clinicians must have a high index of suspicion and be aware of the varied presentations. People must also be told to

capture the insect as identification would help diagnosis.

References

1. Elbohlwan L M, Stidham G L, Bugnitz M C, Storgion S A, Quasney M W. Severe systemic reaction to *Lexosceles reclusa* spider bites in a pediatric population *Pediatr Emerg Care* 2005; 21:177-180.
2. Eichner E R. Spider bite hemolytic anemia: Positive Coombs test, erythrophagocytosis and leucoerythroblastic smear. *Am J Clin Pathol* 1984; 81: 683.
3. Nance W E: Hemolytic anemia of necrotic arachnidism. *Am J Med* 1961; 31:801
4. Stanley L Schrier and Erin Gourley Reid. Extensive nonimmune hemolytic anemias In: *Hematology, Basic principles and practice*, 4th Ed. Elsevier Churchill Livingstone, 2006.
5. Wilson JR, Hagood CO Jr., Prather ID. Brown recluse spider bites: A complex problem wound. A brief review and case study. *Ostomy Wound Manage* 2005; 51:59-66.