

Original
Contributions

SEVERE IRON DEFICIENCY ANEMIA AND LICE INFESTATION

David A. Guss, MD, Mark Koenig, MD, and Edward M. Castillo, PhD

Department of Emergency Medicine, University of California, San Diego Medical Center, San Diego, California
Reprint Address: David A. Guss, MD, Department of Emergency Medicine, UCSD Medical Center 8676, 200 West Arbor Drive,
San Diego, CA 92103-8676

Abstract—Background: Lice infestation is a commonly encountered disorder in emergency medicine. The louse survives from a blood meal from its host; hence, iron deficiency anemia is a theoretic possibility. A limited number of reports of severe iron deficiency anemia have appeared in the veterinary literature, but a thorough review of the medical literature did not reveal a single instance in human beings. **Objective:** We report a small case series of patients with heavy louse infestation and profound iron deficiency anemia. **Case report:** The index case along with two other cases discovered from an exhaustive search of 4 years of the institution's Emergency Department records all had heavy infestation with head and body lice. Laboratory evaluation revealed serum hemoglobin levels under 6 gm/dL, low serum ferritin levels, and microcytic red blood cell indices. All patients were admitted to the hospital, received transfusions, and had evaluation of their anemia. No patient had evidence of gastrointestinal blood loss or alternative explanation for their anemia. **Conclusions:** Although cause and effect cannot be established from this case series, to the best of our knowledge, this is the first published evidence of a provocative association of louse infestation and severe iron deficiency anemia in humans. © 2011 Elsevier Inc.

Keywords—anemia; louse; iron deficiency

INTRODUCTION

Pediculus humanus corporis and *capitus* are common infestations. These lice survive from a blood meal from their

hosts. The veterinary literature has a series of reports of profound anemia in cattle and one report of anemia in spider monkeys attributed to species-specific infestation with lice (1–6). A recent case of a patient with profound iron deficiency anemia associated with heavy louse infestation without other apparent cause for anemia raised the question of a possible causative relationship between louse infestation and anemia. A search of the medical literature employing PubMed, EMBASE, and Google Scholar with keywords “pediculosis,” “lice,” and “louse,” each coupled with the term “anemia” dating back to 1953 did not reveal a single case of anemia associated with louse infestation. Furthermore, a review of several recent major texts in the field of infectious disease and parasitology did not reveal any mention of louse infestation and anemia in humans (7–10). To the best of our knowledge, presented herein is the index case of severe iron deficiency anemia associated with heavy louse infestation. This case led to a 4-year review of an emergency department (ED) database for additional cases. The findings of that review are presented as well.

INDEX CASE SYNOPSIS

A 61-year-old man presented to the ED with a complaint of lightheadedness and generalized weakness of 1 week duration. The patient was homeless and was transported by paramedics. He denied fever, chest pain, cough, abdominal pain, vomiting, diarrhea, or bloody or darkly colored stool. Past medical history was notable for cellulitis.

The patient was not taking prescription medications and denied illicit drug use. Physical examination revealed a regular pulse of 89 beats/min, blood pressure 130/71 mm Hg, oral temperature 36.8 °C (98.2°F), respiration 16 breaths/min, and oxygen saturation 98%. The patient was disheveled and his clothing was covered with lice. Head and neck examination were normal with the exception of the palpebral conjunctiva, which was noted to be pale. Heart examination revealed a regular rhythm without murmur or gallop; the lungs were clear to auscultation. The abdomen was soft without palpable mass or tenderness. Rectal examination yielded a brown stool that was negative for occult blood. The skin did not reveal any discoloration or rash, and was remarkable for numerous live lice on the body and scalp, with louse nits in the hair. Routine laboratory studies revealed normal electrolytes, blood urea nitrogen, and creatinine. The hemoglobin was 4.0 gm/dL (normal range 14–17 gm/dL), hematocrit 14.6% (normal range 40–50%), mean cell volume (MCV) 60.6 μm^3 (normal range 82–98 μm^3), and white blood cell count 10,100/mL (normal range 4.1–11.0 $\times 1000/\text{mm}^3$). The patient was shaved, bathed, and treated with permethrin cream and shampoo. He was admitted to the hospital for transfusion and further evaluation. During his hospitalization he received a total of 5 units of packed red blood cells. Work-up of anemia revealed serum ferritin of 6 ng/dL (normal range 22–322 ng/dL) with normal red blood cell (RBC) folate, vitamin B12, and haptoglobin levels. Upper gastrointestinal endoscopy and colonoscopy were performed and there were no abnormalities identified. During hospitalization the patient had a febrile episode and grew methicillin-sensitive *Staphylococcus aureus* from his blood. Cardiac ultrasound was negative for valvular disease or vegetations. He received 6 days of antibiotics and was discharged on vitamin and iron supplements along with sulfamethoxazole trimethoprim.

ADDITIONAL CASES

To determine if there were other cases of severe anemia associated with louse infestation, a review of ED records was conducted. After approval by the institutional review board, all ED records from October 2004 to June 2008 were searched for the presence of a hemoglobin test and any one of the key words, pediculosis, louse, lice, infestation, and permethrin, and then cross-referenced against laboratory values of hemoglobin ≤ 6 gm/dL. This value of hemoglobin was utilized to identify the most dramatic cases of anemia to assure that identified patients were likely to have been admitted and evaluated for their anemia. The inpatient records of ED cases that met the inclusion criteria of anemia as defined by hemoglobin ≤ 6 gm/dL and description of infestation by lice in the

ED record were reviewed. Data collected included demographics of age, gender, social aspects of homelessness, or descriptors of drug or alcohol abuse. Vital signs, physical findings, and descriptors of louse infestation by nursing or physician staff were recorded. Laboratory data included complete blood count and any laboratory values that might be reflective of an evaluation of anemia. This included complete blood count, serum iron, serum ferritin, transferrin, serum B12 level, serum folate, and serum haptoglobin. Any investigation performed to assess for gastrointestinal or other blood loss, such as upper endoscopy or colonoscopy, was recorded as well.

During the study period there were 134,029 visits to the study ED. There were a total of 102 patients with a hemoglobin test and one of the qualifying key words over the study period. After a review of patient records, 5 patients (B, C, D, E, and F) beyond the index case (A) were identified that met the inclusion criteria, and all were admitted to the hospital from the ED. The ages of the additional cases ranged from 42 to 55 years old, and three were male. Chief complaints upon arrival were one each for weakness, rash, shortness of breath, assault, and abdominal pain. Four patients arrived by ambulance and one by police car. Four patients (B through E) were described by one or more providers as being covered in “bugs” or “lice”; one patient (F) self-described infestation by lice. This patient never had any health provider documentation to support louse infestation. All patients described by health providers as being infested were treated with permethrin 5% lotion or solution while in the ED. The ED chart review indicated that all patients admitted to being chronically homeless and to use alcohol in excess. All patients denied signs or symptoms of gastrointestinal or other bleeding and no patient had bleeding during their hospitalization. A complete summary of laboratory values, transfusion history, and any endoscopic procedures performed during their ED stay or subsequent hospitalization are found in Table 1.

In this case series, 5 (A through E) patients were identified with heavy louse infestation based upon health care provider description and need for permethrin during the ED stay and severe anemia characterized by hemoglobin < 6 gm/dL. Patient F was not confirmed to be infested with lice and was included in the initial case retrieval due to the nature of the keyword search employed to identify possible cases. Four patients (A, B, D, and E) had clear characteristics of iron deficiency anemia based upon low red blood cell MCV and mean cell hemoglobin concentration, and low serum ferritin levels. All patients were evaluated for blood loss with one or more stool specimens for occult blood, and 4 of 5 patients had upper and lower endoscopies during their hospitalization. All patients had negative tests for occult blood. Patient D did demonstrate changes characteristic of hypertrophic

Download English Version:

<https://daneshyari.com/en/article/3247570>

Download Persian Version:

<https://daneshyari.com/article/3247570>

[Daneshyari.com](https://daneshyari.com)