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Case Report

10-year-old case report of pediculosis with severe anaemia

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ABSTRACT

Excessive consumption of cow milk and menorrhagia are the two most common causes of iron deficiency anaemia (IDA) in children. However, there have been reported cases of parasitic infestation causing IDA. Pediculus humanus survives on human blood, and prolonged blood loss causes anaemic symptoms. In the current case report, a 10-year-old girl complained of pallor and dizziness. During her physical examination, a head lice infestation was discovered. The patient had no history of chronic illness and used to eat a normal diet that was high in iron. Her haemoglobin level was measured to be 4 g/dl. Doctors determined that the severe iron deficiency was caused due to the head lice infestation. To reach the required haemoglobin level, she was admitted to the hospital and given a blood transfusion. Her head was washed with permethrin 1% shampoo, which removed over 60% of the lice in a single wash. She was instructed to wash her hair with the shampoo again after seven days.

Keywords: Iron deficiency anaemia, Risk factors, Incidence, Prevention

INTRODUCTION

Pediculosis humanus capitis, also known as head lice, is a major infectious disease prevalent across the world, particularly among school-aged children.[1] A systematic review and meta-analysis has revealed that approximately 19% of school-aged students have encountered head lice in their life.[2] Furthermore, a cross-sectional study conducted in the Eastern region of Saudi Arabia revealed that 77.69% of school workers demonstrated having head lice. According to the study, female school workers constituted a significantly higher proportion of those infested with head lice than male school workers.[3] Head lice are typically transmitted through head-to-head contact, but they can also be transmitted through fomites.[4] They feed on human blood, but, in some cases, the parasite burden is high enough to cause iron deficiency anaemia (IDA).[5] Permethrin 1% lotion is one of many treatment options for patients suffering from head lice.[6]

CASE REPORT

On January 16, 2023, a 10-year-old girl presented to the emergency department (ED) of King Saud Hospital Unsizah, Saudi Arabia. The patient had complained of pallor and dizziness for the past few days. Her visit to the ED was motivated by a lack of activity and an unusually high pallor. She did not have a cough, difficulty breathing, palpitation, syncope, vomiting, or diarrhoea. She also had no history of jaundice, urine colour change, urine quantity decrease, skin rash, joint pain, bleeding from any site, trauma, or visual and hearing problems. However, she had a mild headache. The patient had no history of chronic illnesses, hospitalization, travel, or drug use, and there was no family history of similar conditions or other diseases. Her diet was well-balanced and contained plenty of iron-rich foods and meat. She had not yet reached menarche. However, the physician noticed that the patient's hat was infested with head lice. There were also lice on her neck.

On admission to the hospital, it was discovered that she had a heavy infestation of head lice and demonstrated poor hygiene. Her haemoglobin (Hb) level was 4 g/dl, her mean corpuscular volume was 80.5 fl, her iron level was 2.39 µmol/l, her reticulocyte count was 4.33%, and her red cell distribution width (RDW) was 14.4%. She tested negative for malaria and for both direct and indirect coombs tests; her renal function tests were within normal ranges, and her electrolytes and albumin levels were unremarkable. During her hospital stay, she received a blood transfusion to raise her Hb level to 7.4 g/dl. On the second day of her admission, she was given permethrin 1% shampoo. This was applied to her head and then covered for five hours. When the patient took a shower, 60%-70% of the lice were discovered to be dead. She was soon released, and her mother was instructed to wash and comb her hair frequently and give her another dose of permethrin 1% after 7 days. She was scheduled for a follow-up visit after 10 days, at which the physical examination revealed that she was almost free of head lice.

DISCUSSION

Menorrhagia is one of the most common causes of iron deficiency in young females.[7] Other significant risk factors include inadequate iron intake, inappropriate haemoglobin synthesis,[8] and iron absorption decrease from the gut.[9] In this case, head lice infestation was identified being as another potential etiology of IDA. Ogbuji et al. had reported this cause of IDA in their case report of a 13-year-old female who had presented with severe iron deficiency due to head lice infestation.[7] This cause of iron deficiency has also been reported in other cases.[10-12]

Although there have been a few cases of pediculosis capitis reported as being causes of IDA, a causal relationship has yet to be established between the two in medical literature.[13-15] One reported cause of head lice infestations is poor hygiene. Guss et al conducted a case study series to investigate head lice infestation among homeless people. The authors identified that a lack of access to basic amenities, such as proper housing and facilities to maintain adequate hygiene, is a contributing factor to head lice infestations.[16] In another case study report, even though the patient was not homeless, personal hygiene was identified as a factor causing head lice infestations.[7] Even though this patient had all of necessary amenities, she was discovered to maintain inadequate hygiene. According to the literature, a patient's gender may be a risk factor for pediculosis capitis. Almost all the reported cases were of female patients, and original articles revealed that a significantly higher proportion of females than males demonstrated head lice infestations.[3] However, Hau and Muhi-Iddin reported the case of an 11-year-old male, with a haemoglobin level of 2.1 g/dl, who was suffering from a severe head lice infestation.[17] Fustino et al reported severe head lice infestation in a 12-year-old female with a haemoglobin level of 4.7 g/dl.[18] The haemoglobin level in our current case report was 4 g/dl. In our case, as in other previously reported cases, blood transfusion was required to restore the minimum-needed level of hemoglobin.[18] Permethrin 1% shampoo was provided to the patient to kill the parasite, and 60%-70% of the lice were dead after the first wash.

CONCLUSION

Infestation of head lice was found the cause of the severe IDA in this case report because all other clinical markers for the IDA were found negative in the patient. Poor hygiene maintenance was found the cause of head lice infestation. Regular baths and combing hear can help to reduce the prevalence of head lice and prevent any severe outcome.

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